

International Journal of Childbirth Education



Common Discomforts of Pregnancy

The official publication of the International Childbirth Education Association

VOLUME 32 NUMBER 1 JANUARY 2017

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The official publication of the
International Childbirth Education Association

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The International Childbirth Education Association, founded in 1960, unites individuals and groups who support family-centered maternity care (FCMC) and believe in freedom to make decisions based on knowledge of alternatives in family-centered maternity and newborn care. ICEA is a nonprofit, primarily volunteer organization that has no ties to the health care delivery system. ICEA memberships fees are \$95 for individual members (IM). Information available at www.icea.org, or write ICEA, 2501 Aerial Center Parkway, Suite 103, Morrisville, NC 27560

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Columns

The Editor's Perspective – Common Discomforts of Pregnancy vs. Warning Signs
by Debra Rose Wilson, PhD MSN RN IBCLC AHN-BC CHT..... 4

Across the President's Desk – Welcome to Our New President
by Debra Tolson, RN BSN ICCE IBCLC CPST, ICEA President..... 5

Features

Complementary Approaches to Pregnancy Induced Nausea and Vomiting
by Christine A. Argenbright, PhD RN..... 6

Fatigue in Pregnancy
by Kwaghdoo Atsor Bossuah, MSN MPA DNP FNP-C RN..... 10

Normal Anxiety of Pregnancy
by Carmelita L. Dotson, MSSW LAPSW ABD, Wanda Davidson, MSW, PhD, and Telvis Rich, MSW LGSW MA EdD MSW..... 13

A Guide to Common Skin Disorders while Pregnant
by Debra Sullivan, PhD MSN RN CNE COI, and Virginia Sullivan..... 16

Breast Tenderness in Pregnancy
by Grace Moodt, DNP MSN RN..... 19

Sleep and Pregnancy: Understanding the Importance
by Marci L. Zsomboky, MSN PMHCNS-BC CNE..... 22

Common Discomforts of Pregnancy: Leg Cramps
by Courtney Nyange, DNP MSN RN CPFI..... 25

Pregnancy Related Low Back Pain
by Linda Gibson, DNP MSN RN..... 27

Discomforts in Pregnancy: Varicose Veins
by Sherin F. Tahmasbi, DNP APRN FNP-C..... 30

Anxiety and Pregnancy
by Lee Stadtlander, PhD..... 32

Self-Care of Nausea and Vomiting in the First Trimester of Pregnancy
by Maria A. Revell, PhD MSN RN COI..... 35

Not So Sexy Legs: The Varicosities of Pregnancy
by Deborah Weatherspoon, PhD MSN RN CRNA, Jeanne Morrison, PhD MSN RN, and Christopher A. Weatherspoon, APRN MS FNP-BC..... 39

The Forgotten System During Pregnancy: Women and Oral Health
by Janice Harris, EdS MSN RN COI..... 43

PICA during Pregnancy
by Derrick Johnson, MSN RN, and Kathy Gretton, RN FNP-c MSN MHSA..... 45

Book Reviews

The Mother-Infant Interaction Picture Book: Origins of Attachment
reviewed by Sandra Marklin, PhD, CNS, RN..... 48

Social and Behavioral Science for Health Professionals
reviewed by James G. Linn, PhD and Thabo T. Fako, PhD..... 49

Common Discomforts of Pregnancy vs. Warning Signs

by Debra Rose Wilson PhD MSN RN IBCLC AHN-BC CHT

We need to differentiate between common discomforts and warning signs of pregnancy for the childbearing family. It is essential that they know when to seek immediate medical assessment. Many common discomforts are better tolerated when the family is armed with evidenced-based selfcare measures in advance. This issue is filled with articles on different discomforts of pregnancy, why we think they happen, evidence-based approaches to reducing the symptoms, as well as when to seek medical attention.

Warning signs indicate the immediate hospital or health care provider is required. These include vaginal bleeding, seizures, high fever, severe abdominal pain, severe headaches, blurred vision, or difficulty breathing. Women should also seek health care as soon as possible if they feel ill, have swelling, have abdominal pain, or are running a fever (NIH.gov, 2016| March of Dimes, 2016).

Discomforts of pregnancy can begin within days of conception with hypersensitivity to smell and may progress through heartburn, nausea, vomiting, headaches, pinched nerves, varicose veins, disturbances in sleep, and more. With any approach to treating discomforts we want to first do no harm. Measures must be proven safe for pregnant women and their babies. Some of these measures have been used for centuries and are not considered to be dangerous.

Women's Health.gov (2016) describe normal body changes and discomforts which include:

- Body aches
- Breast changes
- Constipation
- Dizziness
- Fatigue, sleep problems
- Heartburn and indigestion
- Hemorrhoids
- Itching
- Leg cramps
- Morning sickness
- Nasal problems
- Numb or tingling hands
- Stretch marks, skin changes
- Swelling
- Urinary frequency and leaking
- Varicose veins



Debra Rose Wilson

These discomforts are so common that over time tendencies seemed to cluster around the phenomena with folklore. Some folklore includes heartburn; the more heartburn you have, the more hair on the baby's head. If the hair on your legs grows faster you are having a boy (or in some cultures a hairy baby). The darker the linea nigra, the calmer the baby. If you have a lot of heartburn eat toast corners and your baby's hair will be curly. Or perhaps you have heard your grandmother say you will lose a tooth with every pregnancy.

Remind your families to seek advice from their provider before they take any medicine, supplement, application, exercise, or herbal product to treat a discomfort. There are times that pregnancy is uncomfortable. For many discomforts of pregnancy there are several things you can do to reduce the symptoms. I reflect back on the nausea and vomiting for 18 weeks soon to be replaced with back pain, constipation, stretch marks, heartburn, fatigue, insomnia, dizziness, and frequency of urination. My son was grounded for 10 years for all that. Some have a lovely pregnancy, feel healthy, energized, and marvel at the wonder of the beautiful experience. Just be aware that there are some who don't want to hear about it. ☺

Special thanks this issue to Ahing for the photos and our model Treasure. They are both BSN nursing seniors at Tennessee State University who took on this photo project for our January issue on common discomforts in pregnancy.

Members please email me. Let me help you write for our journal. Let me know what you want to know. Upcoming issues include breath work, comfort measures in pregnancy, and evidenced-based practice. If you are interested in doing a book review, email me and inquire about what is available and I will provide guidelines.

Peace,
Debra – editor@icea.org

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Welcome to Our New President

by Debra Tolson, RN BSN ICCE IBCLC CPST, ICEA President

ICEA saw tremendous growth in 2016. With the talents and dedication of the Board of Directors, ICEA heightened our collaboration with other like-minded professional organizations, created the Early Lactation Care Workshop, updated the ICEA Mother-Friendly Labor Support Skills Workshop for Nurses, streamlined and updated the IAT Process, and expanded ICEA's international outreach.

I am honored to begin service as ICEA's President during this important time of the association, and I believe my background has prepared me for this prestigious role. For 33 years I have practiced as a registered nurse, educator, and lactation consultant in urban and rural hospital settings. I began my career in Houston, TX, in the Texas Medical Center at Hermann Hospital working in the Labor & Delivery Unit and the Maternal Fetal Special Care Unit after graduating from Texas Woman's University with a BSN. From there, I practiced for a few years in Huntsville, AL before moving to Fort Morgan, CO. There, I continued my career in nursing at Colorado Plains Medical Center on the LDRP Unit as an OB nurse, Childbirth Educator, Lactation Consultant, and Nurse Educator for NRP and AWHONN Fetal Monitoring.

I've been active in ICEA since 1999, and have served on the board in various positions including Director of Conferences, Secretary, and President-Elect. I am also currently a member of AWHONN, ILCA, and CLCA. When I'm not busy supporting expectant and new families or serving the interests of ICEA, I can be found spending time with my family. My husband (Bob), daughters (Abigail and Me-

lissa), and I enjoy going to baseball games to watch my son (Bobby) play. We also love spending time in the Colorado Rocky Mountains and are usually camping or skiing.

In 2011, I had the unique privilege of receiving the Colorado Florence Nightingale Award for Advocacy. Receiving this award was such a testimony of the love and passion I have for supporting families in their birth and breastfeeding experiences.

As president of ICEA, I understand that our members and I share those same passions. So, in order to encourage ICEA's growth along with our members' passions, we acknowledge it's important for the organization to come alongside the membership and support them. We will accomplish this in several ways throughout 2017.

First, ICEA will streamline our various programs and improve our certification process. We also have plans to develop webinars that will provide our membership access to current, evidence-based information. In addition, we have developed new relationships in several international locations, and we will continue to support those relationships and increase our presence internationally.

We are excited about the opportunities for growth that these tasks will bring. Your participation alongside ICEA will ensure that we continue to flourish in 2017.

Warmly,
Debra Tolson, RN BSN ICCE IBCLC CPST
ICEA President

The Connie Livingston Memorial Scholarship Program

Connie Livingston, friend, mentor, and inspiration to so many, passed away unexpectedly on December 29, 2016. The ICEA board and membership are deeply grieved at the loss of our dear friend.

As a strong leader, Connie played an integral role in the continued development of ICEA. She served in various roles on the Board of Directors and, most recently, as the 2015-2016 President. The association's success and current status are results of her tireless dedication to ICEA and our mission.

Though we cannot sufficiently express the impact Connie had on ICEA, we have decided to honor this incredible woman by renaming our scholarship program The Connie Livingston Memorial Scholarship Program. It

is our hope that future generations of Childbirth Educators and Doulas will continue to be impacted by Connie's passion, care, and dedication.

If you would like to make a donation in Connie's memory, then please visit the Scholarships page on our website. Your generous gift will ensure students around the world who are passionate about supporting Family-centered Maternity and Newborn Care will be able to continue the work to which Connie dedicated her life.

ICEA has been honored by the outpouring of love for our Past President.



Complementary Approaches to Pregnancy Induced Nausea and Vomiting

by Christine A. Argenbright, PhD RN

Abstract: Managing the nausea and vomiting during pregnancy is challenging. The evidence-based options are limited. The purpose of this paper is to review current management for pregnancy induced nausea and vomiting. Both traditional and complementary approaches that have been recognized in the literature are presented. Complementary approaches used for the treatment of nausea and vomiting during pregnancy are safe and effective for both mother and fetus. Two of the favored approaches are acupressure and ginger.

Keywords: nausea and vomiting, pregnancy, complementary therapies

Nausea and vomiting continue to be uncomfortable symptoms associated with pregnancy. The precise etiology of nausea is unknown, but the most commonly referenced possible cause is the fluctuation of hormones during pregnancy (Cisek & Bucholc, 2015; Goodwin, 2002; Lagiou et al., 2003; Sherman & Flaxman, 2002). Nausea arises around week four of pregnancy and could last through the duration, but normally minimizes after week 12 (Lacroix, Eason, & Melzack, 2000). Nausea can be mild, moderate, or severe, and can lead to a severe form of the condition known as hyperemesis gravidarum (Almond, Edlund, Joffe, & Palme, 2016; Miller, 2002). This paper does not address hyperemesis because this is considered a medical condition, not a normal discomfort of pregnancy.

It is estimated that eighty percent of pregnant women will be burdened with nausea and vomiting and its untow-

ard effects (Cisek & Bucholc, 2015). Women are not only physically compromised; it also affects psychological and social well-being (Tiran, 2012). Though the protective effects of the nausea and vomiting have been linked to better fetal outcomes, it can be difficult to manage (Koren, Madjunkova, & Maltepe, 2014; Sherman & Flaxman, 2002).

Management is critical for a multitude of reasons:

1) to maximize comfort level of the expected mother; 2) to decrease risk to the fetus associated with fluid and nutrition deficiencies; and 3) to diminish troublesome physical, psychological, and social effects. The purpose of this paper is to review current management for normal pregnancy-induced nausea and vomiting, including complementary approaches that have been recognized in the literature.

Management

Current management of nausea and vomiting is comprised of dietary and behavioral interventions, limited pharmaceutical management, and various types of complementary therapies (Fantasia, 2014). Many pregnant women are open to the use of complementary therapies, with an estimated 35% disclosing use of at least herbs while being pregnant (Frawley et al., 2015; Holden, Gardiner, Birdee, Davis, & Yeh, 2015). Maternal safety and teratogenic risks are primary concerns for any of these recommended changes, management, or therapies.

Dietary and Behavior Changes

Dietary and behavioral changes are very common and are usually the first recommendation for early onset of symptoms. The changes are variable and tailored to personal needs. Recommendations include to limit intake to small frequent meals, and be mindful of the effects of food. Eat dry carbohydrates between meals and before getting out of bed in the morning. Increase protein particularly before bed. Decrease fatty foods and anything that seems to increase

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Pregnancy Induced Nausea and Vomiting

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symptoms. Decreasing or eliminating smoking is important for all pregnant woman and may help reduce nausea. (Fantasia, 2014; King & Murphy, 2009; Maltepe & Koren, 2013). Attention to nutritional habits, lifestyle changes, and psychosocial influences is crucial to supporting and treating these women and managing their symptoms (Tiran, 2012). If these changes and modifications are not effective and the symptoms begin to interfere with quality of life, further measures may be considered, such as pharmaceuticals.

Pharmaceutical Management

Pharmaceuticals are commonly prescribed for treating pregnancy-induced nausea and vomiting. Types of medications that have been used to treat nausea and vomiting are vitamins, antihistamines, anticholinergics, dopamine antagonists, phenothiazines, butyrophenones, serotonin antagonists, and corticosteroids (King & Murphy, 2009; Meltzer, 2000; Niebyl, 2010). However, only 2.1% of these medications are Federal Drug Administration (FDA) approved (Koren, 2014). Extensive caution arose with the use of thalidomide in the 1960's and the associated birth defects (Ding, Leach, & Bradley, 2013). Again in the 1980's, Bendectin (doxylamine plus pyridoxine) was removed from distribution in the US by the pharmaceutical company because of concern associated with birth defects and associated litigations (Koren, Pastuszak, & Ito, 1998). It has since then been reintroduced into the market in 2013, as no scientific evidence has substantiated those claims. The only medication that has evidence-based recognition for maternal and fetal safety with FDA approval is pyridoxine (Vit. B)-doxylamine combination (Koren, 2014; Koren et al., 2010; Matok et al., 2014). The high percentage of off label pharmaceutical use during pregnancy is alarming and women need to be aware of the other options available.

Pyridoxine (vitamin B6)

Pyridoxine is one of the most commonly used vitamins to effectively treat nausea and vomiting during pregnancy (Matok et al., 2014; Smith, Crowther, Willson, Hotham, & McMillian, 2004; Sripramote & Lekhyananda, 2003). Note that vitamins are studied as both pharmaceutical and complimentary (Matthews, Haas, O'Mathuna, & Dowswell, 2015). It has been used since the early 1940's and has been proven to be effective to prevent and suppress nausea (Willis, Winn, Morris, & al, 1942).



Ailing Andini

Complementary Therapies

With the increasing concern for maternal and fetal safety, women are open to the use of complementary type recommendations that include herbal treatment as well as a variety of therapies during pregnancy (Frawley et al., 2015; Holden et al., 2015). Herbal supplements have medicinal qualities, and they are not regulated by the FDA. Pregnant women should always use caution with any supplements or therapies. The US National Center for Complementary and Integrative Health (NCCIH) categorizes complementary approaches as natural products or mind and body practices (NCCIH, 2016). To assure complementary type therapies are safe and effective, we will only discuss those treatments that have been researched and/or validated in the literature. After the 2015 Cochrane review of the literature, it was recognized that acupressure, acustimulation, acupuncture, ginger, chamomile, vitamin B6, lemon oil, and mint oil had variable results with limitations (Matthews et al., 2015). The research on these types of therapies is growing, but the intrinsic nature of treating individuals as a whole is problematic in research. Adjusting dosage, timing and delivery of these therapies/treatments becomes a barrier to the current standards of research accepted in the scientific community. Even with such barriers, research validation is surfacing and more studies are yielding respectable results. The review is limited to acupressure, acustimulation, acupuncture, and ginger.

Acupressure and Acupuncture

Acupressure, a traditional Chinese healing practice, is noninvasive form of touch therapy. Unlike acupuncture that

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Pregnancy Induced Nausea and Vomiting

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utilizes needles to stimulate areas, acupressure gently stimulates through touch. These forms of Chinese healing practices are grounded in principles that embrace the life force of Chi or the specific flow of energy along a mapping of physical areas in our bodies (meridians) (Kafaei-Atrian et al., 2016). The area of the body that is associated with treating nausea and vomiting is called Nei Guan point (P6) (Jamigorn & Phupong, 2007). This area can be manually stimulated through acupressure/acupuncture or it can be stimulated by wearing a wrist band that holds pressure on the P6 point inside the wrist (Jamigorn & Phupong, 2007). Stimulation of this pressure point either by acupressure or wrist bands has been proven to be safe and effective (Gurkan & Arslan, 2008; Roscoe & Matteson, 2002). Another randomized control trial on P6 stimulation through acustimulation (low level electrical impulses) yielded favorable results for reducing nausea and vomiting (Rosen et al., 2003).



Debra Rose Wilson

Ginger (*zingiber officinale*)

Ginger is a root that can be ingested in many different forms: freshly grated, extracts, syrups, teas, soda, or even pill form. Ginger has been proven to be safe and effective (Firouzbakht, Nikpour, Jamali, & Omidvar, 2014; Saberi, Sadat, Abedzadeh-Kalahroudi, & Taebi, 2013; Smith et al., 2004; Sripramote & Lekhyananda, 2003). Ding's 2013 systematic review identified four more randomized control trials that validated its safety and efficacy; dosage and timing was variable and warrants further investigation (Ding et al., 2013).

Other

Chamomile, lemon oil, mint oil, peppermint, and raspberry tea have been identified as potential useful remedies, but minimal studies have provided any evidence of their safety or effectiveness.

Conclusion

Treating nausea and vomiting during pregnancy continues to be challenging for the expectant mother and the health care provider. Although frequently mild or manageable, nausea can progress into conditions that threaten the safety of the mother and fetus. The continued awareness to provide maternal and fetal safety is imperative when considering treatment options. There are a wide range of dietary and behavioral changes that can be effective according to individual needs and preferences. Pharmaceutical approaches are limited but those that are researched and have proven to be safe and effective. The use of complementary approaches, such as acupressure and ginger, are the most recognized therapies that are proven to be safe and effective through research. They offer promise for providing an improved quality of life during the vulnerable time of pregnancy.

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Pregnancy Induced Nausea and Vomiting

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Fatigue in Pregnancy

by Kwaghdoo Atsor Bossuah, MSN MPA DNP FNP-C RN

Abstract: Fatigue during pregnancy is a physiological, psychological, and potentially pathological condition of decreased energy. Many pregnant women experience fatigue during the first trimester and the third trimester. While fatigue usually reduces during the second trimester, some women experience fatigue throughout pregnancy which is likely to cause discomfort and affect daily living. An overview of fatigue discomfort during pregnancy can help distinguish normal fatigue from clinical manifestation and educate women on self-care measures and when to seek medical care.

Keywords: fatigue, pregnancy, insomnia, anxiety

Fatigue is a subjective feeling of exhaustion interfering with daily activities of living (Cheng, Chou, Wang, Tsai, & Liou, 2015), an overwhelming lack of energy, and difficulty with routine and usual activity (Ameringer et al., 2016). Fatigue is among the most prevalent and distressing symptom in pregnant women, with up to 60–90% of women experiencing fatigue at some time during pregnancy (Ameringer et al., 2016; Gaston & Prapavesis, 2013; Tsai, Shun, Lai, Lee, & Lee, 2013).

Fatigue reflects a physiological, psychological, and potentially pathological state that decreases an individual's energy. In Bastian and Brown's (2016) survey of pregnant women, fatigue ranked in the top four list of most frequent symptoms during all three trimesters of pregnancy, although some reports indicate that fatigue improves during the second trimester. Fatigue is not only unpleasant but also leads to reduced cognitive performance and poor self-care abilities in pregnant women. Those experiencing fatigue complain of energy deficiency, mental exhaustion, poor muscle endurance, delayed recovery after physical exertion, and non-restorative sleep (Gaston & Prapavesis, 2013).

An overwhelming feeling of fatigue is often one of the earliest signs of pregnancy. Fatigue during pregnancy is due to hormonal changes and increase in blood volume that leads to extreme fatigue. Such feelings usually subside during the second trimester but are likely to return in the third trimester. A surge in energy during the second trimester is thought to be a result of hormonal stabilization. Late in pregnancy, fatigue is due to increased weight and demands as the body's systems work harder to meet the needs of a growing baby (Bastian & Brown, 2016). Blood volume increase is necessary for the placenta to develop and the uterus to become thicker. As a woman's internal and external energy needs increase, fatigue develops. In both early and late pregnancy, difficulty sleeping can contribute to feelings of fatigue. Sleep disturbance is a situational factor that can contribute to fatigue. Symptoms of fatigue during pregnancy can range from mild tiredness to severe exhaustion. (Tsai et al., 2013).

An overwhelming feeling of fatigue is often one of the earliest signs of pregnancy.

Fatigue is a known mental state that is positively associated with stress and anxiety. Perceptions of stress trigger biological changes that lead to a physiological reaction affecting health. The main physiological indication of stress is corticotrophin releasing hormone, which is associated with fatigue and anxiety (Jallo, Ruiz, Elswick, & French, 2014). Cheng et al. (2015) found most women complained of minor fatigue, while some thought it was serious, and the prevalence of fatigue increased closer to the due date. Although Cheng et al. reported that the findings from this study are like other studies, they indicated that a Canadian study found cultural and ethnic difference in perceived fatigue.

Other factors known to contribute to maternal fatigue are unhappiness and multiparity: The demand of managing existing children causes greater demand that leads to increased stress and fatigue (Jallo et al., 2014). Looking at the relationships between nighttime sleep, daytime napping, depression, and perceptions of fatigue in the third trimester,

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Fatigue in Pregnancy

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Tsai et al. (2012) concluded that the duration of night sleep had a significant negative association with fatigue. Tsai et al. (2012) further found that depressive symptoms were significantly associated with perceived fatigue in the 38 women examined. Depression during pregnancy shares psychological, physiological and behavioral tendencies with fatigue and poor sleep quality. However, based on their objective and subjective finding that the quality of sleep was not significantly associated with fatigue, Tsai et al.'s conclusion was that the duration of nighttime sleep is more beneficial than daytime napping, which is consistent with previous studies that indicated negative association between the duration of nighttime sleep and self-reported fatigue. Nighttime sleep should be encouraged for pregnant women and addressing depressive symptoms may help alleviate fatigue during pregnancy. In addition to depression, other preexisting conditions may contribute to fatigue. Williams et al. (2010) concluded that women diagnosed with migraine headaches are more likely to experience insomnia and fatigue during pregnancy.

Pregnant women may find self-care recommendations useful in reducing fatigue. Exercise and relaxation practices, such as guided imagery, may be particularly beneficial. Gaston and Prapavesis (2013) noted that pregnant women participating in a 30 minute moderate exercise program reported reduced fatigue, leading to the recommendation for pregnant women to adopt exercise as a way of improving fatigue and overall wellbeing.

Adequate sleep of about seven to eight hours may also help decrease tension and improve mood (Bastian & Brown, 2016). To improve sleep, pregnant women are to avoid exercise in the evening or before bedtime and to increase exposure to bright lights during the day. Naps can be helpful but should be for less than an hour in length and ideally during the afternoon. Although Bastian and Brown (2016) recommended napping to promote rest and reduce fatigue during pregnancy, Tsai et al. (2012) concluded that it is the amount of nighttime sleep that indicated the most significant benefit.

Guided imagery is a recommended self-help technique used to reduce perceived stress, which is known to cause fatigue. Jallo et al. (2014) investigated the effects of a professional, 12-week guided imagery program in a group of 72 African American pregnant women and showed a positive improvement in sleep and fatigue. Psychological reactions affect health outcomes; hence, the use of guided imagery to reduce perceived stress may reduce fatigue (Jallo et al., 2014). Other self-care options include resting in Sim's position, getting help with household chores, increasing activity



Ailing Andini

level, supplemental iron to reduce anemia, pelvic-rock exercise, avoiding caffeine, and eating a balanced diet (Bastian & Brown, 2016).

As noted from several studies, fatigue can be physiological, psychological, and even pathological. Pregnant women are encouraged to use self-care techniques to improve their quality of life. When fatigue becomes such a burden that a pregnant woman is no longer able to maintain social and personal activities, it is time to seek professional help. Women should be encouraged to call for assistance, especially when fatigue does not improve or it worsens

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Coming Soon from ICEA – New Educational Tools

The ICEA Board of Directors is extremely pleased to announce two new evidence-based Position Papers that will soon be available on the ICEA website.

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International Childbirth Education Association

Normal Anxiety of Pregnancy

by Carmelita L. Dotson, MSSW LAPSW ABD, Wanda Davidson, PhD, and Telvis Rich, MSW LGSW MA EdD MSW

Abstract: A new pregnancy is often associated with anxiety. For best pregnancy outcomes, choosing to seek early prenatal care is best. This prenatal care must include checking on the pregnant woman's emotional health. Many pregnant women may be under the belief that they are powerless with their anxiety and not share their symptoms. This article offers suggestions to help pregnant women with their anxiety.

Keywords: pregnancy care; anxiety during pregnancy; pregnancy self-care

It is natural in life to feel anxious or eager every now and then. Anxiety is a normal human emotion. Anxiety is described as distress or an uneasiness of mind, often anticipatory. Anxiety can occur in various forms such as the anticipation of future events like a new arrival to the family. Anxiety during pregnancy is referred to as pregnancy-specific anxiety. The purpose of this paper is to discuss the impact of anxiety during pregnancy.

Henderson and Redshaw (2013) state that pregnancy-specific anxiety is a distinct and definable syndrome. This syndrome includes fears about the health of the baby, hospital and health care experience, the woman's own health, anxiety about the impending childbirth, and issues concerning the parenting role. Several studies have indicated that anxiety occurs during pregnancy as a result of the change that is about to occur (Deater-Deckard & Scarr, 1996; Deave, Johnson, & Ingram, 2008). The expecting mother may have concerns for her own health as well as that of the baby, and financial concerns as well. She may be asking: "Will I be a good parent?" "How will those in my life be affected by my pregnancy and the birth of this child?" These two questions and others are all normal responses. Such anxiety can play a role in the well-being of the mother as well as the impending

child (Crnic & Low, 2002; Deater-Deckard & Scarr, 1996). It is important for the expecting mother to be aware of the normalcy of these questions. Knowledge, relaxation, and preparation can provide a woman with a positive pregnancy and birth experience,

There are common concerns and issues that may lead to anxiety during pregnancy and birthing. Antenatal anxiety is a type of clinical depression that affects women during pregnancy. Symptoms include worrying thoughts, panic attacks, irritability, feeling tense in the muscles, and tightness in the chest (COPE, 2014). These symptoms, if not treated properly during pregnancy, can become precursors to postpartum depression (Rubertsson, Hellstrom, Cross, & Sydsjo, 2014). However, studies indicate that antenatal anxiety may be more common than depression (Atwood, 2013). Antenatal anxiety symptoms were found to correspond with the age of the mother, particularly young mothers. This type of anxiety has also been shown to correspond to a previous history of anxiety, as well as feelings about the approaching birth and fear of the birthing process.

It is important to acknowledge that antenatal anxiety symptoms are not only unhealthy for the expectant mother but the baby as well. With this in mind, it is important to estimate the prevalence of maternal anxiety and any associated factors (Rubertsson, Hellstrom, Cross, & Sydsjo, 2014). Notably, the disorder most closely associated with general anxiety and worry is generalized anxiety disorder (GAD). GAD is diagnosed when worry about everyday problems becomes exaggerated and last for at least six months (National Institute of Mental Health, 2009). When considering how stressful pregnancy can be with the anticipation of the arrival of a new life, it is understandable that GAD is described as the most common antenatal anxiety disorder (Atwood, 2013).

antenatal anxiety symptoms are unhealthy for the expectant mother and the baby

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Normal Anxiety of Pregnancy

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Because some anxieties can be severe, it may be necessary to consider medication. It is important to consider a holistic view of pregnant women when assessing anxiety levels and referring to their provider. There are potential long-term complications of antenatal anxiety, particularly since it has shown to have a significant relationship to postpartum depression (Atwood, 2013; Rubertsson, Hellstrom, Cross, & Sydsjo, 2014).

Physical changes commonly associated with pregnancy such as heartburn, sweating, increased heart rate, and shortness of breath, if misunderstood may lead to panic. These symptoms usually occur during the 6th and 28th weeks of pregnancy. The combination of these symptoms and maladaptive behavioral responses can lead to escalating physical symptoms of anxiety and panic (Avni-Barron & Wiegartz, 2011).

Anxiety based on the anticipation of maternal responsibility may lead to sleep disruption and result in bizarre dreams and nightmares. Pregnant women may also have nightmares that included anxiety about complication during labor and delivery and about the baby being in danger. Sleep deprivation may affect or be affected by anxiety. Both too little and too much sleep influence a pregnant woman's quality of life. Due to sleep issues, the pregnant women may experience nightmares, sleep talking and/or sleep walking. Sleep issues may continue after childbirth. Rest and sleep are also a means of self-care. Most individuals need seven to 10 hours of sleep per night. Rest and sleep are other areas that are covered with the pregnant woman during and after her pregnancy, and can be added to the self-care plan.

Joy and happiness usually accompany the announcement of a pregnancy. Along with the announcement may be the perception that the pregnant woman has fulfilled her gender duty (Dagan, Lapidot, & Eisenstein, 2001, p. 19). There are a number of decisions to be made between announcing a pregnancy and preparing for the intending childbirth. Two such decisions are accommodations to body and status changes. Along with body change may be discomfort. The pregnant woman may not have a person or professional with whom she can share her discomfort. The physical and emotional discomfort the pregnant woman experiences can seep out through dreams. These dreams may act as conduits through which discomforts are processed. Encourage women to talk about and process their dreams to reduce worry and normalize the bizarre dreams. Problems can result when these dreams go unchecked and interfere with the quality



Ailing Andini

of sleep. For the pregnant woman, like most people, getting restful sleep can be viewed as part of their efforts to care for themselves.

Often the pregnant woman is busy and self-care can be overlooked. Self-care can be defined as deliberate actions one yields to care for their physical, mental, and emotional health. Self-care is seen as an active and influential activity that leads to physical, psychological, emotional, spiritual, social and emotional well-being.

Taking part in activities such as relaxation, diet, and exercise are forms of self-care measures. Relaxation activities can include quietly sitting and watching television, looking out the window, and/or knitting. All of these activities allow the pregnant woman to change her focus. Food and diet are types of self-care measure that people often take for granted. Receiving the proper nutrition and daily nutrients during pregnancy is very important. When trying to ensure she receives healthy nutrients, the pregnant woman should not substitute meals with fast foods. Proper nutrition is an area that should be covered with the pregnant woman during and after her pregnancy.

Exercise is another means of self-care. Being physically active is a good health measure as the physical activity can help the pregnant woman contend with anxiety. Physical activity should be discussed with the pregnant woman by medical staff during and after her pregnancy. Physical activity self-care plans can be developed that help the pregnant woman relieve anxiety during pregnancy and act as a stress relief during the early childcare period.

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Normal Anxiety of Pregnancy

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The pregnant woman who is confined to bedrest can stay informed by reading books, watching videos, and searching the web for helpful relaxation information. When able, taking a child birthing and/or parenting class provides opportunities for the pregnant woman to talk with other moms, share concerns, and learn from each other. These activities can lead to social engagement and the development of a long-term support system.

Conclusion

For all pregnant women, regular prenatal care is vitally important to a successful pregnancy, labor and delivery, and the long-term outcome for her child. This prenatal care must include monitoring and offering assistance when the pregnant woman is experiencing anxiety. Many pregnant women may be under the belief that their anxiety will just go away after the birth of their child and/or that they just have to deal with this anxiety. An important role that the health care practitioner will play is to assist the pregnant woman in her cognitive transition into parenthood. This assistance will help the pregnant woman cope with the normal stresses of parenting (Hildingsson & Thomas, 2014).

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A Guide to Common Skin Disorders while Pregnant

by Debra Sullivan, PhD MSN RN CNE COI, and Virginia Sullivan

Abstract: Skin conditions during pregnancy and lactation can be a concern for new moms. The childbirth educator would benefit from a brief guide to common disorders and treatment options. A description, symptoms and concerns related to pregnancy, treatment options, and when to seek medical care, are outlined for these more common skin disorders: eczema, psoriasis, acne, and melanoma.

Keywords: skin disorders, pregnancy, psoriasis, eczema, acne

During pregnancy, mothers strive to maintain good health and to promote the health of their babies. Having a chronic or acute skin condition during pregnancy could cause fear that treating these conditions could cause harm to their unborn child (American Academy of Dermatology [AAD], 2016). Women will need and seek guidance before and during their pregnancies as well as during lactation, when skin disorders affect them. The childbirth educator would benefit from a basic knowledge base to answer questions that may arise regarding various skin problems during the childbirth experience. This article will define and discuss treatment for some of the more common disorders – eczema, psoriasis, acne, and melanoma, and examine their effects on pregnancy, childbirth, and lactation.

It is always a good idea to seek medical advice when skin changes occur

Common Disorders

Eczema

Description. Atopic dermatitis is the most common type of eczema, which usually affects people who have asthma and/or hay fever or who have relatives who suffer from these conditions (National Eczema Association [NEA], n.d.). This type of eczema appears as a red, itchy rash usually found on the arms, cheeks, and legs. Other types of eczema cause itching and redness, but can also cause blisters (NEA, n.d.).

Symptoms related to pregnancy. The most common rash during pregnancy is atopic dermatitis as described above (AAD, 2016). Pregnancy brings on an immune system shift that could trigger atopic dermatitis or eczema in women who have already experienced eczema (AAD, 2016).

Medications. Mild or moderate topical corticosteroids are safe during pregnancy (AAD, 2016). They can also be diluted with a moisturizer to reduce the amount of medication used while still promoting healing. If topical corticosteroids are not effective, then a short-term treatment of more potent formulations can be used (AAD, 2016). Immunosuppressants may be used before pregnancy but will only be prescribed if a severe outbreak occurs. A healthcare provider will manage these types of drugs.

Self-care measures. Bathing and showering at least once a day is recommended, followed by the application of moisturizers (NEA, n.d.). Safety is a concern while bathing, as the extra weight during pregnancy can cause balance problems. Women should be aware for body changes and be sure to stabilize themselves when entering or exiting a bath or shower. Mothers should avoid substances that irritate their skin. Clothes should be soft and made of breathable material (e.g. cotton), avoiding fabrics like wool that can be irritating (NEA, n.d.). Following are some natural topical treatments, but it is recommended that the mother's healthcare provider be consulted before trying any of these remedies.

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A Guide to Common Skin Disorders while Pregnant

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Coconut oil. Virgin or cold pressed oil should be applied once or twice daily to damp skin. It has been reported that coconut oil both moisturizes and reduces staph bacteria on the skin (NEA, n.d.).

Sunflower oil. Apply to skin once or twice daily shortly after a bath. It is a skin moisturizer and barrier that has anti-inflammatory properties (NEA, n.d.).

Cardiospermum. This flowering tropical vine is extracted and infused into oil that can be applied as a topical ointment. It can help reduce itch, inflammation, and bacteria on the skin (NEA, n.d.).

Mind-Body. Stress beyond being pregnant can trigger eczema. Some techniques used to lower stress include meditation and massage. Find ways to set aside time to relax.

When to seek help. Consultation with a healthcare provider should be sought early in pregnancy if eczema is already being treated or if it is a new condition. A major complication of eczema can be bacterial, fungal, and/or viral infections of the skin, because skin with eczema lacks infection-fighting proteins (National Institute of Allergy and Infectious Diseases, 2015.). If an infection occurs, it is important to seek medical treatment as soon as possible.

Psoriasis

Description. Psoriasis can occur anywhere on the body. Plaque psoriasis is the most common type and can appear most often on the elbows, knees, and scalp with well-demarcated red plaques with a silver scale. It can be diagnosed by history and physical examinations, but a skin biopsy can be done to rule out other conditions. It is a life-long autoimmune disease with a genetic component making it common in families. It is usually triggered by environmental events, such as stress, a viral infection, or hormonal responses (Sullivan, Weatherspoon, & Weatherspoon, 2016). Parents may worry that their child may inherit psoriasis if it is present in the family. If one parent has psoriasis the offspring has about a 15% chance of developing the disease; if both parents have the condition then the chances go up to about 75% (Psoriasis and Psoriatic Arthritis Alliance [PAPAA], n.d.). About a third of those who have psoriasis have a relative who also has or had psoriasis.

Symptoms related to pregnancy. Each year psoriasis affects 65,000 – 107,000 women during pregnancy and childbirth (Horn, Chambers, Menter, Kimball, & Council, 2009). Immune system shifts while pregnant can sometimes cause psoriasis to improve (AAD, 2016). “About half of pregnant women experience a dramatic improvement that may allow them to temporarily discontinue treatment” (AAD, 2016, para. 4).

Medications and Treatments. Systemic medications, such as biologics, should be avoided. Mild or moderate topical corticosteroids are safe during pregnancy. They can also be diluted with a moisturizer to reduce the amount of medication used while still promoting healing. High-potency topical corticosteroids should not be applied to the nipple if breastfeeding to avoid passing medication to the baby. If topical corticosteroids are not effective or if additional treatment is necessary, then phototherapy may be recommended (AAD, 2016). Narrowband ultraviolet B is recommended for pregnant and breastfeeding mothers. However, psoralen with ultraviolet A (PUVA) treatment is not recommended because the psoralen can enter breastmilk and lead to light sensitivity (AAD, 2016). After pregnancy, if any psoriasis treatment was changed, resume the pre-pregnancy regimen. If breastfeeding, consult your doctor.

Self-care measures. Much of the evidence for alternative therapies is anecdotal, but many therapies for psoriasis are the same as listed for eczema earlier in this article. Again, always recommend that the parents talk with a healthcare provider before adding any complementary and alternative therapies.

When to seek help. A healthcare provider should be consulted early in pregnancy if psoriasis is being treated or if it is a new condition. Any treatment, even if topical, needs to be evaluated as it can affect the unborn fetus.

Acne

Description. Acne is a disorder of the skin's oil glands and hair follicles caused by hormonal actions and other substances (National Institute of Health: National Institute of Arthritis and Musculoskeletal and Skin Disease, 2015). The red pustule lesions usually occur on the face, neck, back, chest, and shoulders.

Symptoms related to pregnancy. Due to an increase in androgen hormones, many women will experience acne flares. This may seem trivial, but it can make a pregnant mom more self-conscious about her ever-changing body (AAD, n.d.).

Medications. A healthcare provider should monitor the treatment plan. Treatments that might be recommended include over-the counter acne medications (Glycolic acid and benzoyl peroxide) and prescription antibiotics. Pregnant women should avoid tetracycline antibiotics (AAD, n.d.). If the mother breastfeeds, she should follow the same precautions as during pregnancy.

Self-care measures. Wash skin with lukewarm water and mild cleansers. Use sunscreen with an SPF of 30 or higher every day to protect against pigment changes in the skin.

When to seek help. If acne becomes irritated or infected, seek treatment from a healthcare provider.

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A Guide to Common Skin Disorders while Pregnant

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Melanoma

Description. A melanoma is a dangerous form of skin cancer that develops from damaged skin cells (Skin Cancer Foundation, n.d.). Most melanomas are black or brown and resemble moles, but they can also be pink, red, purple, blue, white, or even skin colored (Skin Cancer Foundation, n.d.).

Symptoms related to pregnancy. Pregnancy does not increase the risk for melanoma, but this cancer often develops during childbearing years, between 20-40 years of age (AAD, n.d.). It is safe to have a skin biopsy during pregnancy.

Medications. There are safe treatments during pregnancy, especially if caught early. Basically, the treatment for a pregnant woman would be the same treatment used in a non-pregnant patient. In the early stages, the melanoma would be removed along with a section of normal skin. If it has grown deep, then the cancer may have spread and treatment options may be limited. Interferon appears to be safe. Radiation of the head and neck is an option, but not the pelvic area because it can cause birth defects (AAD, n.d.). Breastfeeding is usually fine if you had a melanoma while pregnant.

Self-care measures. Early detection is the best self-care; the pregnant mother should be familiar with her skin and be able to recognize any changes in moles.

When to seek help. If you see a change in a mole, or if it is growing or bleeding, you should ask your doctor to look at it as soon as possible. The ABCDE signs of a melanoma are a good way for the pregnant mother to evaluate changes in her skin. If any one of the signs is present, medical treatment should be sought. Following are the ABCDE signs of melanoma from Skin Cancer Foundation (n.d.):

- **A - Asymmetry.** The benign mole is symmetrical and a malignant mole can be asymmetrical
- **B - Border.** The melanoma will have an uneven border
- **C - Color.** The melanoma will most commonly have different shades of the primary color such as brown, black, or tan.
- **D - Diameter.** Melanomas are usually larger in diameter but could be smaller.
- **E - Evolving.** Any change in size, shape, color, elevation, or another trait, or a new symptom like bleeding, itching, or crusting, can point to danger.

Conclusion

Skin conditions can be exacerbated by pregnancy and lactation due to changes in hormone levels and stress. It is always a good idea to seek medical advice when skin changes occur, as the need for treatment may be warranted. The childbirth educator will benefit by being aware of skin disorders during pregnancy in order to advise the parents of treatment options.

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Breast Tenderness in Pregnancy

by Grace Moodt, DNP MSN RN

Abstract: Breast tenderness in pregnancy is a common discomfort. Physical and hormonal changes preparing the body for pregnancy and breastfeeding are the primary causes. Treatment for breast tenderness includes warmth and supportive bras. Pregnant women are encouraged to continue with self-breast exams every four to six weeks during pregnancy and to communicate unusual or abnormal findings to their providers. Diagnosis and treatment will be determined by trimester, type of breast cancer, pathology, and clinical staging. Childbirth educators are able to answer questions, encourage communication, and facilitate support.

Keywords: breast tenderness, pregnancy complaints, perinatal breast changes, breast cancer

The maternal body goes through significant changes to prepare for childbirth and lactation, leading to one of the more common complaints of pregnant women: breast tenderness. Breast tenderness is common but may cause pregnant women to worry whether tenderness is normal or something that needs further investigation. As childbirth educators, questions will arise of how to treat this discomfort and when to see the provider. By reviewing the etiology and incidence of breast tenderness and normal changes in breast tissue, childbirth educators can empower pregnant women to determine when changes need to have further investigation.

Physical changes

Pregnant women commonly report feeling pain, tingling, tenderness, and enlargement of their breasts throughout their pregnancy, especially in the first trimester.

For example, in a survey of 900 pregnant women, Nazik and Eryilmaz (2013) reported that 76.2% of women indicated breast pain or discomfort in the first trimester, 59.1% in the second trimester, and 44.2% in the third trimester. First trimester changes causing breast tenderness begin at conception with the hormonal changes that will eventually cause full development of the breast. Breast tissue increases with hypertrophy of glandular tissue and increased vascularization (Link, 2016).

Physical changes of breast tissue also include mammary lobules. These lobules will further differentiate forming secretory acini in the alveoli, eventually becoming milk-secreting organs at maturation (Cunningham et al., 2014). Thus, maturation causes the breast to become larger and denser and increase in weight. The skin appears thinner and blood vessels become more prominent in response to the increase of blood volume. Areola and nipples become darker, and nipples enlarge and become erect. These changes can lead to a tingling sensation. This tenderness and tingling can also intensify during sexual stimulation.

Breast Tenderness and Treatment

Treatment recommended for breast tenderness is to wear a supportive bra with wide shoulder straps and pads to absorb any discharge (Nazik & Eryilmaz, 2013). If there is pain at night, wearing a snug sports bra may help (Link, 2016). Washing breasts with warm water and keeping dry may also relieve tenderness. Cool compresses or a heating pad on low may help. Childbirth educators can inform pregnant women that the discomfort may interfere with sexual expression or foreplay. Assure women it is temporary.

Lumps and Bumps

The American Cancer Society (2014) indicated that 1 in every 3,000 pregnant women is found to have breast cancer. Although rare, it is a very real concern for pregnant women. The standards of practice for obstetric providers include a clinical breast exam in the initial prenatal assessment. During

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Breast Tenderness in Pregnancy

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this assessment, women are educated and encouraged to continue self-breast exams every month until delivery. Hormonal influence on breast tissue can cause significant changes, such as thickening or swelling of the breast, pain, or lumps to occur. In the second trimester, breasts can also have leaking of fluid, this is usually colostrum. Pregnant women should be encouraged to discuss any change in breast tissue they find during self-examination with their provider. The Centers for Disease Control and Prevention (2016) has provided the public with specific signs and symptoms that, if discovered, a woman should report to her provider, including:

- New lump in breast or underarm
- Thickening or swelling in part of the breast
- Irritation or dimpling of breast skin
- Redness or flaky skin in the nipple area or the breast
- Pulling in of the nipple or pain in the nipple area
- Nipple discharge other than breast milk, including blood
- Pain in the breast

The good news is breast pain is unusual in breast cancer (McKenney, 2016). Breast tenderness, although irritable, does not indicate a poor diagnosis. Abenhaim et al. (2012) investigated more than 8 million deliveries over 10 years and discovered 6.5 cases of breast cancer in 100,000 deliveries. This is encouraging, yet every lump is a frightening event in any pregnant woman. The American Cancer Society (2014) recommends that any lump should be investigated.

Clinical presentation is key to early diagnosis and treatment. Becker (2016) found diagnosis and treatment usually was delayed in pregnancy due to the physiologic change in breast tissue being misdiagnosed as normal. If there is any engorgement or tenderness, clinicians should be contacted to determine if these are pregnancy related or merit further investigation. Becker also recommended any abnormal lesion should be evaluated. Once a lump is discovered, a breast ultrasound should be the next step. This will limit radiation exposure to the fetus and will allow closer examination of the abnormality. A core biopsy, which removes a small portion of the abnormal tissue, can be performed under local anesthesia, which has no effect on the fetus. If malignancy is suspected, a mammogram will be ordered which has little radiation exposure risk (Becker, 2016). After confirmation from the mammogram, a pathologic examination will be conducted. A histologic exam will determine the tumor type.

Treatment options depend on the trimester of pregnancy, the type of breast cancer, clinical staging, and pathology (Wise & Weatherspoon, 2016). Treatment following



Ailing Andini

malignancy confirmation typically includes chemotherapy, radiologic therapy, surgical removal, or a combination of approaches. Other treatment options for breast cancer in pregnancy include hormonal and anti-HER2 therapy (Becker, 2016). Wise and Weatherspoon discussed the role of family support to assist the family through this crisis. Collaboration with social work and counseling services can help these patients with social support, education about treatment options, and access to other services they might need during treatment (Wise & Weatherspoon, 2016).

Summary

Breast tenderness in pregnancy is common and expected with the physical and hormonal changes that occur. Childbirth educators are in a wonderful place to allay the fear associated with this common discomfort. Educators can also answer questions from young families who have concerns and encourage vital communication with healthcare providers.

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International Childbirth Education Association

Sleep and Pregnancy: Understanding the Importance

by Marci L. Zsomboky, MSN PMHCNS-BC CNE

Abstract: An area that is often overlooked in the assessment of pregnant women is that of sleep. Women experience various forms of sleep changes during the perinatal period that are specific to the different trimesters. The literature suggests that sleep changes and resulting sleep deficits impact pregnant women in numerous ways, including both the physiological and psychological domains. Importantly, mood alterations associated with poor sleep quality can manifest as anxiety and depression. This article reviews sleep changes associated with pregnancy, highlights some outcomes that can occur from sleep disturbances, and suggests some interventions to promote improved sleep quality in pregnant women.

Keywords: pregnancy, sleep, deprivation

It has been well documented that pregnancy alters sleep throughout the gestational period (Volkovich, Tikotzky, & Manber, 2016). Women can be affected both physiologically and psychologically as a result of the sleep changes that occur during pregnancy. The healthcare provider's understanding of these common changes, along with potential outcomes of sleep changes, can provide direction for assessments which screen for and address problem sleep.

Nightly Sleep Patterns

It is recommended that a healthy adult sleep an average of 8 hours a night (Malik & Kaplan, 2005). Statistics indicate, however, that adults are sleeping less than recommended,

averaging around six hours per night (Chang, Pien, Duntley, & Macones, 2010). Insomnia is common, with approximately 10% of the population experiencing variations of insomnia and poor sleep quality on a regular basis (Finan, Quartana, & Smith, 2015). Modern technology likely decreases sleep satisfaction, as individuals who take their cell phone to bed report increased rates of fatigue, insomnia, and daytime sleepiness (Exelmans & Van den Bulck, 2016).

Sleep Deprivation

Sleep deprivation is also common, affecting the majority of the population (Chang et al., 2010). Sleep deprivation can be quantitative or qualitative. Malik and Kaplan (2005) report that quantitative sleep deprivation can be defined as either total or partial sleep loss. Total sleep deprivation occurs when an individual loses a complete night of sleep. Partial sleep deprivation occurs when an individual has difficulty maintaining a sufficient night of sleep. While total sleep loss appears more dramatic, partial sleep loss can lead to a cumulative sleep deficit, or sleep debt, especially when it is a chronic condition.

Sleep quality indicates how an individual cycles through the different stages of sleep. Discussions of sleep quality also include amounts of time associated with arousals or awakenings (Malik & Kaplan, 2005). Of note is that numerous awakenings per night may constitute a sleep deficit significant enough to compare to quantitative sleep deprivation.

Sleep deprivation and its effects are also an individualized experience. Physiological changes associated with sleep deprivation include increased blood pressure, increased heart rate, decreased immune system function, increased risk for diabetes and obesity, and elevated biological markers associated with inflammation (Cauter, Spiegel, Tasali, & Leproult, 2008; Chang et al., 2010; Malik & Kaplan, 2005). Areas of psychological well-being that can be affected by sleep deprivation include memory, cognition, and mood, with mood possibly being the most significantly impacted by sleep loss (Malik & Kaplan, 2005; Volkovich, Tikotzky, & Manber, 2016).

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Sleep and Pregnancy: Understanding the Importance

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Perinatal Sleep

Pregnancy brings with it numerous sleep changes. Sleep is influenced beginning in the first trimester, and changes are maintained to some degree throughout the pregnancy and into the postpartum period. Parity is also a factor, with nulliparas reporting poorer quality of sleep than multiparas (Signal et al., 2007).

Sleep changes come early in pregnancy.

Perinatal Sleep

Sleep changes come early in pregnancy. Lee, Zaffke, and McEnany (2000) objectively measured sleep in pregnant women through the use of polysomnography and determined that sleep changes occurred as early as weeks 11-12 of pregnancy. Other noted changes during this period included increased sleep time, more awakenings, and less deep sleep. Chang et al. (2010) also reported increased sleep time and daytime sleepiness during the first trimester, whereas the third trimester brought a decrease in sleep time. The second trimester seems to be when sleep is most efficient and satisfying (Signal et al., 2007).

Sleep Disturbances

Sleep disturbances in pregnancy are similar to those that occur in the non-pregnant population. Sleep difficulties that were noted in a study by Facco, Kramer, Ho, Zee, and Grobman (2010) included disturbances in early pregnancy (frequent snoring, restless leg syndrome, short sleep duration, poor overall sleep quality), and increased symptoms in the third trimester (worsening of snoring, nocturnal apnea, excessive daytime sleepiness, worsening restless leg syndrome, shortened sleep duration, and ongoing poor overall sleep quality). Several of these disturbances are directly related to the weight gain associated with pregnancy,

Sleep disturbances associated with pregnancy have been correlated to self-reports of poorer health-related quality of life. In a study of 245 pregnant women, Da Costa et al. (2010) found that sleep problems had an effect on both physical and emotional areas on a self-report measure of quality of life. In a similar study, Volkovich, Tikotzky, and Manber (2016) studied 148 pregnant women, and found that emotional distress measures of anxiety and depression were associated with self-reported sleep problems. Tomfohr et al. (2015) also studied the relationship between sleep quality in pregnant women and mood distress. Findings indicated that those pregnant women who reported a poorer quality

of sleep also were the most likely to endorse higher levels of anxiety and depression.

Reports also indicate that maternal and fetal outcomes may be affected by sleep disturbances and sleep deprivation; these outcomes include longer labor, increased pain during labor, and increased rates of preterm labor and cesarean section (Chang et al., 2010).

Suggested Interventions

Pregnancy's negative impact on sleep can lead to several concerning outcomes, including increased depressed mood and anxiety. Therefore, it is important to identify methods by which to improve sleep in pregnant women. Physical activity and mindful yoga are two interventions that have been researched in pregnant women.

Borodulin et al. (2010) assessed the association between forms of physical activity with both quantitative and qualitative measures of sleep in women who were at twenty weeks gestation or greater. Actual data was gathered when the women were at 27-30 weeks gestation. Physical activity categories included: inactivity, recreational, mixed, care giving, recreational indoors, transportation, and recreational-care giving. Self-administered questionnaires measured engagement in physical activity and sleep quality and duration. Results indicated that neither sleep quality nor sleep duration was strongly associated with physical activity.

Beddoe, Lee, Weiss, Kennedy, and Yang (2010) studied the effect of a mindful yoga training on the sleep of women in the second or third trimester of pregnancy. Fifteen nulliparous women received a 7-week mindful yoga training. Sleep was measured by both self-report and actigraphy. Results indicated that women in the second-trimester of pregnancy had decreased nighttime awakenings and reported sleep efficiency from pre- to post-intervention, while women in the third-trimester of pregnancy did not report nor demonstrate improved sleep.

Conclusion

Sleep's effects on pregnant women are substantial and can affect both the mother and the fetus. Understanding common sleep deficits associated with pregnancy will guide the healthcare provider in proper assessment, care, and education of pregnant women. Areas of special concern include mood, as pregnancy-related sleep disturbances have been associated with increased depression. Mindful yoga training and physical activity were explored as ways to improve sleep for pregnant women. Additional research is needed to determine other methods which may positively affect both quantitative and qualitative measures of sleep.

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Sleep and Pregnancy: Understanding the Importance

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For more information for authors please see our website at www.icea.org.

Common Discomforts of Pregnancy: *Leg Cramps*

by Courtney Nyange, DNP MSN RN CPFI

Abstract: Many women experience leg cramps during pregnancy. Leg cramps can become more common as pregnancy progresses and primarily occur in the second and third trimesters. No specific cause has been identified for leg cramps during pregnancy; however, identifying potential contributing factors may help reduce and relieve leg cramps. While leg cramps are generally benign and do not pose any harm to the pregnant woman or her fetus, certain serious conditions can resemble leg cramps and require immediate medical attention.

Keywords: discomforts during pregnancy, leg cramps, pregnancy and leg cramps

Many women experience leg cramps during pregnancy. Leg cramps can become more common as pregnancy progresses and primarily occur in the second and third trimesters. Leg cramps can become especially troublesome at night and can lead to sleep disturbances (Ricci, Kyle, & Carman, 2013). Up to 30% of women can be affected by leg cramps during pregnancy, and up to 25% of women can be affected by restless leg syndrome during pregnancy (Young & Jewell, 2011). According to the International Classification of Sleep Disorders (American Academy of Sleep Medicine, 2001), leg cramps are defined as painful sensations of muscular tightness or tension that usually occur in the calf but can occasionally occur in the foot. Leg cramps may last for a few seconds and resolve on their own, but in some cases, they can last for up to 30 minutes (American Academy of Sleep Medicine, 2001). Additionally, individuals with leg cramps may experience one or two episodes each night, several times a week (American Academy of Sleep Medicine, 2001).

No specific cause has been identified for leg cramps during pregnancy; however, contributing factors include additional weight gain from pregnancy, changes in circulation during pregnancy, pressure from the growing fetus on pelvic nerves and blood vessels, not consuming enough of certain minerals such as magnesium and calcium, and dehydration (Hensley, 2009; Ricci, Kyle, & Carman, 2013). Identifying these contributing factors may help in developing strategies to reduce leg cramps.

Self-Care Measures

Measures that can be taken to help prevent leg cramps include avoiding over-stretching the legs, pointing the toes, and walking excessively; wearing low-heeled shoes; wearing support hose; and arising slowly from a sitting position. Calf-stretching exercises done before bed may help reduce leg cramps. To perform calf-stretching exercises, stand three feet from the wall and lean toward it; rest your lower arms on the wall while keeping your heels on the floor. Elevating the legs periodically throughout the day will help relieve pressure and minimize strain. Avoid standing for prolonged periods of time or crossing your legs. If you must stand for prolonged periods of time, change your position every two hours by walking or sitting. Drink eight 8-ounce glasses of fluid each day to help ensure adequate hydration. Taking daily walks can also help reduce leg cramps because walking helps improve circulation to the muscles (Ricci, Kyle, & Carman, 2013).

Measures that can be taken to relieve leg cramps include stretching the muscle by dorsiflexing the foot upward towards the body and wrapping a warm, moist towel around the leg muscle. If the leg cramps are due to deficiencies in magnesium or calcium, eat more foods rich in these minerals (Ricci, Kyle, Carman, 2013). Foods rich in magnesium include whole grains, beans, dried fruits, nuts, and seeds. Taking a mineral supplement may also help reduce leg cramps. In a review of the literature, Young and Jewell (2011) found that magnesium lactate or magnesium citrate taken as 5mmol in the morning and 10mmol in the evening was effective at reducing leg cramps.

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Common Discomforts of Pregnancy: Leg Cramps

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Certain serious conditions can resemble leg cramps but require immediate medical attention.

When to Seek Help

Leg cramps are benign and do not pose any harm to the pregnant woman or her fetus. However, certain serious conditions can resemble leg cramps and require immediate medical attention. Unilateral leg pain with a discrepancy in the size of the calves (one more swollen than the other) can indicate a condition known as deep venous thrombosis (DVT); a history of peripheral artery disease (PAD) and the pulses in your lower extremities are decreased; if one extremity is more pale appearing than the other or if one extremity is cooler to the touch; if you have muscle weakness, muscle wasting, hyperreflexia, spasticity, fasciculations, or sensory deficits, as these signs can indicate a serious neuromuscular disorder (Hensley, 2009).

Summary

Leg cramps are common in pregnancy, especially in the second and third trimesters. Self-care measures, including mild exercise and dietary supplementation, can help prevent or alleviate leg cramps. Certain symptoms indicate that a more serious disorder may be present that requires medical attention.



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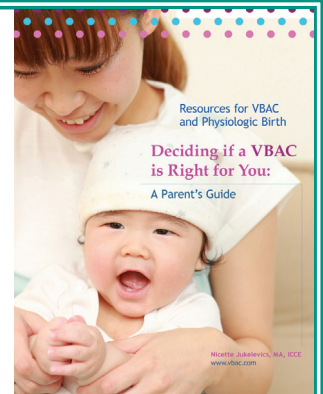
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Pregnancy Related Low Back Pain

by Linda Gibson, DNP MSN RN

Abstract: Low back pain is a frequent complaint during pregnancy, and is a potentially chronic problem. It is the most common cause for lost time at work during pregnancy. There are many theories about the causes of back pain during pregnancy, but no reliable studies from which to draw conclusions. A history of back pain, trauma, or other medical conditions may be the root cause of pain. Self-care methods such as light exercise, yoga, massage, and acupuncture are known to be effective interventions.

Keywords: back pain, pregnancy, self-care

Background

Pregnancy should be a happy time in a woman's life. It is full of expectations and anticipations. Looking forward to all the changes and planning for arrival of the new person in your life is often interrupted by some common discomforts of pregnancy. Low back pain is a frequent complaint. Anywhere from one-third (Bewyer, Bewyer, Messenger, & Kennedy, 2009) to 80% (Bullock, Jull, & Bullock, 1987; Oswald & Assimakopoulos, 2013) of pregnant women complain of low back pain. This complaint begins sometime before or during the fifth month (Bewyer et al., 2009). Unfortunately, most sick leave time taken during pregnancy is due to low back pain (Malmquix, Kjaermann, Andersen, Okland, Larsen, & Bronnick, 2015). It would behoove the healthcare provider to treat low back pain early in pregnancy to help make this time a pleasant experience and to prevent back pain from becoming a chronic problem.

Many articles have been written that discuss low back pain in pregnancy. These articles discuss several theories for low back pain which include such things as postural changes

during pregnancy, changes in the center of gravity, and pelvic joint changes due to weight gain. However, there have been no random control studies to support any of these causes of low back pain. Others support the theory that the hormone relaxin which affects the ligaments of the pelvic girdle as the cause of low back pain even this also has not been shown by researchers as a cause of low back pain in pregnant women (Vleeming, Albert, Ostgaard, Stureson, & Stuge, 2008).

The only risk factor shown to be an absolute cause of low back pain in pregnancy is a history of back pain before the pregnancy or a history of trauma (Bewyer, et al., 2009). Therefore, it is imperative that the healthcare providers ask questions preferably before the patient becomes pregnant or during the initial history and physical. Low back pain during pregnancy is the most frequent cause of sick leave during pregnancy (Malmquix et al., 2015). Teaching some self-care methods to prepare for the pregnancy or early pregnancy would be advisable to relieve low back pain. Relieving low back pain early in pregnancy could also decrease the number sick days used during pregnancy. It is important for the pregnant patient to function in her normal routine and to remain active. One of the best strategies for low back pain is prevention.

Seeking Medical Care

There are other conditions that could be the root cause of back pain other than a previous history of back pain or trauma. If pain continues or becomes worse the healthcare providers would need to rule out other medical causes. Conditions that could indicate there needs to be additional testing and referral include a herniated disc, aortic dissection, and fractures.

Interventions for Low Back Pain

The first goal of treatment is to decrease low back pain. By keeping free of low back pain the patient can keep normal function or increase their daily function. Second goal of treatment is to prevent the low back pain from becoming a

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Pregnancy Related Low Back Pain

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chronic problem or disability. Research has shown that there are many treatments for the healthcare provider to recommend. Some are self-care methods the healthcare provider can teach or ask the pregnant woman to practice.

Self-Care

Many healthcare providers recommend rest when patients are in pain, but this may not be what is best for the pregnant woman. Research recommends four self-care methods of treatment to relieve low back pain. Walking as a form of exercise will keep muscles movable and flexible. Patients who have a history of back pain need to be encouraged to begin walking before pregnancy or start a walking regime as soon as they know they are expecting. Exercise decreases pain intensity, and walking gives a sense of well-being and increases the quality of life. A walking regime is cost effective and can be done at the patient's own pace. Intensity of the walking and distance walked can be increased or decreased according to how the patient feels each day. According to Aparicio et al. (2016) walking increases cortisol levels, the feel good hormone, decreases inflammation, and increases bone health. Walking should be the first thing to recommend when patients who have a history of back pain or have had trauma. Yoga is another form of exercise that will stretch the muscles and increase flexibility. Yoga teaches breathing and can also be done at the pace of the patient. Classes or DVDs are readily available.

Hall, Cramer, Sundberg, Ward, Adams, Moore, Sib-



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britt, and Lauche (2016) recommend massage as a safe and effective option during pregnancy. Massage is another good choice for the pregnant woman. Massage with progressive relaxation and full body massage from a partner have both been shown to decrease low back pain. Aromatherapy would add a synergistic effect to massage. It has shown to be effective in the relief of pain. Some oils to add to carrier oil would be geranium, rose, rosemary, sandalwood, and the standard for relaxation, lavender. Acupressure on the back can relieve low back pain. Teaching the patient how and where to do this may take some additional training for the healthcare provider, but since 33-80% of pregnant patients complain of back pain it would be advantageous to learn this modality.

Pelvic belts can be used to decrease low back pain but can't be worn for a long period of time. These belts could be recommended for break through pain. Wearing a pelvic belt is not as cost effective as walking or yoga. Nor does it have the ability to have lasting effects as exercise. It would be proactive to recommend walking and yoga as a first line of therapy for the relief of low back pain.

Conclusion

Low back pain is a real and potentially chronic problem that resurfaces with pregnancy. Women who have a history of low back pain or trauma continue with this complaint during pregnancy and is the most common cause for lost time at work during pregnancy. With proactive history taking the healthcare provider can assist with self-care techniques that will help the patient remain functional in their daily activities and help make this time of their life enjoyable. Teach women early in their pregnancy to exercise by walking or yoga to become or remain flexible. Self-massage while doing progressive relaxation may also help during the birthing process. Being proactive in treating low back pain is important for pregnancy to be an enjoyable time in a woman's life. If relief does not come from self-care methods then you should recommend a physical therapist or osteopath to assist with pain control efforts. If alternative care is what the patients prefer then recommend a certified therapist in acupressure, acupuncture, and aroma therapy.

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Discomforts in Pregnancy: *Varicose Veins*

by Sherin F. Tahmasbi, DNP APRN FNP-C

Abstract: A wide range of changes can accompany pregnancy; these can be immunological, metabolic, endocrinal, and vascular. This in turn leads to an increase in a woman's vulnerability to develop changes in her skin and other parts of the body. All of these changes are adaptations of the mother's body to accommodate the fetus' growth. This paper aims to discuss varicose veins as an example of a consequence of vascular changes during pregnancy, why they are more common in pregnancy and how to help pregnant women in the management of varicose veins.

Keywords: varicose veins, pregnancy, varicosities

What are Varicose Veins?

Veins are extremely fragile structures containing even smaller structures known as valves, whose function is to prevent backflow of blood. Should there be any venous defect this can cause venous dilation and valve damage. Damage to the valves leads to an increase in static pressure that causes the veins to bulge. This swelling is known as varicose veins (Pizzorno, Murray, & Joiner-Bey, 2015).

As a result of their damage, varicose veins are dilated and often tortuous superficial veins. As the backflow of blood is now no longer prevented, gravity leads to blood flowing in the reverse direction of the heart, also known as venous reflux (Heller & Evans, 2015). Varicose veins are more common in the lower extremities such as the legs, although they can be found anywhere in the body (Smith, Netter, & Smith, 2008).

Varicose Veins and Pregnancy

A number of changes occur to the woman's body during pregnancy, including changes to the vasculature – in particular, venous changes. Venous alterations during pregnancy are as a result of both hormonal and mechanical occurrences (Cronenwett, Johnston, & Rutherford, 2014). In terms of mechanical phenomena, the expanded uterus is now compressing on both the inferior vena cava and pelvic veins, by the woman's third trimester, which results in hypotension and decreased cardiac output as a result of reduced venous return to the heart (Catchpole, 2013). In later pregnancy blood begins to pool in the lower extremities due to this compression, which can result in varicosities of the legs and vulva, as well as other conditions such as haemorrhoids and dependent edema (Ball, Dains, Flynn, Solomon, & Stewart, 2015).

Hormonal changes have a significant role in development of varicose veins

The most important role in development of varicose veins is thought to be by hormonal factors. Varicose veins have been found to develop in the majority of pregnant patients during the first trimester where there is minimal enlargement. An increase in the hormone progesterone is mandatory for a successful pregnancy because it acts to inhibit smooth muscle contractibility and enable the pregnant uterus to remain stable. Increased levels of progesterone in pregnancy is that it also inhibits the contractibility of smooth muscle in the wall of the veins, allowing subcutaneous veins to consequently dilate (Rutherford, Cronenwett, & Johnston, 2014). Both these mechanical and hormonal phenomena, combined with genetic predispositions, will result in an increased chance of a pregnant woman having varicose veins during her pregnancy.

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Discomforts in Pregnancy: Varicose Veins

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Management of Varicose Veins in Pregnancy

Pregnant patients with varicose veins should be advised to wear graduate compression hose as these can help to minimize dilatation of the superficial veins as well as maintain competency of the valves within them. The most appropriate compression stockings are those with 20-30 mmHg pressure (Papadakis & McPhee, 2016).

Women who have known risk factors for developing venous disease, the most common risk factor being a family history, should be advised to wear compression stockings in the first trimester of their pregnancy. Maternity compression hose are designed to fit more comfortably around the ankles as opposed to further up the leg. These will work to change the compression in the leg and this gradual change can lead to the weak valves working more effectively to subsequently allow veins to circulate the blood more effectively. It is considered safe to recommend compression hose to pregnant women. It is mandatory that accurate sizing of the compression stockings is obtained to ensure best possible



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management of the varicose veins (Asbjornsen, 2012). Refer women to their primary care provider for further assessment if varicose veins are particularly abundant.

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Anxiety and Pregnancy

by Lee Stadtlander, PhD

Abstract: Some anxiety is normal for pregnant women, however, when a woman experiences an inability to concentrate; has trouble functioning at work or home; experiences a frequent sense of panic, fear, restlessness; has obsessive thoughts; or does not enjoy things that used to make her happy, it is a cause for concern for childbirth professionals. Prolonged anxiety is associated with preterm birth and low birth weight. A number of alternative treatments may help decrease anxiety, including an adequate diet, meditation, exercise, and childbirth education. Education of both parents may increase partner support and aid in their communication.

Keywords: anxiety, worry, pregnancy

Feelings of anxiety during pregnancy are relatively common, with estimates ranging from 10-15 % (Dayan et al. 2006) to 33% (Lee et al., 2007) of pregnant women experiencing some level of anxiety during this major life transition. Pregnant women worry about the upcoming labor and anticipated pain (Sjögren, 1997), they may be concerned about the health of the child they are carrying, or the physical changes they experience (Huizink, Robles de Medina, Mulder, Visser, & Buitelaar, 2004). Women's levels of anxiety tend to naturally decline across pregnancy without intervention (Dunkel, Schetter, & Robbins, 2011). However, there is a difference between normal worrying and all-consuming anxiety during pregnancy (also known as antenatal anxiety). If a woman experiences an inability to concentrate; has trouble functioning at work or home; experiences a frequent sense of panic, fear or restlessness; has obsessive thoughts; or does not enjoy things that used to make her happy, it is a cause for concern for childbirth professionals. Other signs of a serious anxiety disorder can be physical, including heart palpitations and muscle tension.

High levels of ongoing anxiety can have adverse health effects on the mother and on the child (Nicholson et al., 2006). High pregnancy anxiety levels have been associated with preterm birth and low birth weight (Dunkel et al., 2012). Effects also include a range of adverse childhood outcomes, including negative emotionality (Gutteling, de Weerth, & Buitelaar, 2005; Huizink et al. 2002), attention deficit hyperactivity disorder (van den Bergh et al., 2005), developmental delays (Huizink et al. 2003), and changes in brain grey matter volume (Buss et al., 2010). Mothers with anxiety are more likely to access prenatal services late, to attend prenatal appointments less frequently, and fail to have regular scans (Kim et al., 2006, Redshaw & Henderson, 2013). Some studies have found that these women have more visits to the obstetrician, mainly related to the fear of childbirth, and show a preference for an elective caesarean section (Andersson et al., 2004; Rubertsson et al., 2014).

The mechanism by which increased anxiety causes adverse outcomes for the child is unclear. Several studies suggest anxiety-driven stimulation of the maternal hypothalamic-pituitary-adrenal axis, and the consequent elevation in maternal and fetal levels of the stress hormone cortisol as a contributing factor (Sarkar, Bergman, O'Connor, & Glover, 2009; Talge, Neal, & Glover, 2007). Increased cortisol levels may impair fetal growth by inhibiting placental growth (Gennari-Moser et al., 2001). Regulation and decreasing utero-placental blood flow (Weinstock, 2005) can affect the onset and duration of labor by interfering with mechanisms that modulate uterine contractions (Grammatopoulos & Hillhouse, 1999), potentially precipitating the need for interventions such as emergency cesarean delivery (Laursen, Johansen, & Hedegaard, 2009).

Risk Factors

While anyone can develop anxiety, a few criteria put a woman at higher risk for a severe anxiety disorder (Biaggi, Conroy, Pawlby, & Pariante, 2016; Giardinelli et al., 2012; Goodman & Tyer-Viola, 2010). Such criteria include lack of a partner or of social support, a history of abuse or of domestic violence, a personal history of mental illness, an unplanned or unwanted pregnancy, adverse events in life and high-perceived stress, present or past pregnancy complications, and pregnancy loss.

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Anxiety and Pregnancy

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Treatments

Severe anxiety may require medication, which should be carefully evaluated by a physician. While medication is one solution to anxiety, there are other, less invasive options. Therapy sessions with a psychologist, psychiatrist, or counselor may help to determine the cause of the anxiety and can help the woman to develop a plan to help ease her worries or learn relaxation techniques. Some other options include:

Sufficient sleep. Some research (Hall et al., 2009) has found that lack of sleep could exacerbate anxiety, so pregnant women should aim for seven to eight hours a night whenever possible.

Whole fresh foods. A growing amount of research has shown that nutrition has an effect on mental health (Hobel & Culhane, 2003). Eating a well-balanced diet, nutrient-dense, whole and unprocessed foods (including fruits, vegetables, fish, nuts, dairy and whole grains), instead of processed and fast foods is thought to support healthy bacteria in the gut, which in turn may help lessen anxiety.

Staying active. Something as quick and easy as a 10-minute walk can decrease levels of tension. Research has found that people who get regular exercise are 25% less likely to develop anxiety or depression (Harrison, Brown, Hayman, Moran, & Redman, 2016).

Taking control of knowledge. Learning about pregnancy and parenting can help couples feel more prepared. Encourage reading of appropriate pregnancy books and taking a childbirth class.

Building a support system. Encourage women to spend time with pregnant friends as well as with experienced parents. They might consider joining an online community to connect with others who are coping with the same feelings. See the Patient Resources for some suggested sites.

Scheduling time to relax. Researchers (Beddoe & Lee, 2008; Guardino et al., 2014) have found that regular meditation, acupuncture, massage, and yoga have benefits for people with anxiety.

Partner support. Partner support is a key aspect for prevention interventions for prenatal depression and anxiety (Pilkington, Milne, Cairns & Whelan, 2016). The transition to parenthood is a significant stressor for both parents that can result in increased marital conflict and decreased relationship quality. Preventive interventions that aim to promote parents' mental health and well-being should help partners support each other in adjusting to this significant life event. Prenatal classes discussing the need for communication about the couple's feelings about pregnancy and childbirth are helpful.

Other prenatal class communication topics may include the use of "I" statements. For example instead of saying, "You don't make any time for us anymore", say "I feel lonely when we spend less time together." Discussions of other supports (e.g., family and friends) that can be accessed with the new baby can be helpful. This improves communication and will most likely decrease argument and anxiety.

In summary, some anxiety is normal for pregnant women, however, if a woman experiences an inability to concentrate; has trouble functioning at work or home; experiences a frequent sense of panic, fear or restlessness; has obsessive thoughts; or does not enjoy things that used to make her happy, it is a cause for concern for childbirth professionals. Prolonged anxiety is associated with preterm birth and low birth weight due to the effects of cortisol.

A number of alternative treatments may help decrease anxiety, including an adequate diet, meditation, exercise, and childbirth education. Education of both parents may increase partner support and aid in their communication. See the Patient Resources for some suggested materials and websites.

Patient Resources

Acker, S. (2015). *Anxiety & Pregnancy: 31 Useful Tips to Manage Anxiety During & After Pregnancy*. Maestro Publishing Group.

Cushman, A., Doe, M., Leif, J., Brilliant, J., & Piver, S. (2012). *The Mindful Way through Pregnancy: Meditation, Yoga, and Journaling for Expectant Mothers*. Boulder, CO: Shambhala; Har/Com Re.

Domar, A. D. & Curry Oakes, S. (2016). *Finding calm for the expectant mom: Tools for reducing stress, anxiety, and mood swings during your pregnancy*. New York, NY: TarcherPerigee/A Penguin Publishing Group

Websites

- **Baby Center. Managing Stress and Anxiety During Pregnancy:** http://www.babycenter.com/o_managing-stress-and-anxiety-during-pregnancy_1683.bc
- **Post-Partum Support International. Anxiety During Pregnancy & Postpartum:** <http://www.postpartum.net/learn-more/anxiety-during-pregnancy-postpartum/>
- **What to Expect. Anxiety during Pregnancy: What's Normal and What's Not?** <http://www.whattoexpect.com/pregnancy/anxiety/>

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Anxiety and Pregnancy

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Self-Care of Nausea and Vomiting in the First Trimester of Pregnancy

by Maria A. Revell, PhD MSN RN COI

Abstract: *The initial celebration of pregnancy can be significantly interrupted by nausea and vomiting. Both conditions can reduce a woman's quality of life. They can also psychologically affect coping with the new pregnancy and physiologically interfere with the ability to carry out normal activities of daily living. Nausea and vomiting can cause frequent visits to a health care provider and even result in hospitalization. These can financially affect a woman's ability to support herself and her family. Nausea and vomiting are frequently self-managed. It is important for the pregnant woman to know when to self-treat and when to seek intervention from a health care provider. Promotion of both psychological and physiological well-being is an important component for self-care and provider implemented management.*

Keywords: pregnancy, nausea, hyperemesis gravidarum, acupressure

First Trimester Nausea and Vomiting

Pregnancy is often a time of celebration but it can also be a time for nausea and vomiting in the early days, weeks or even months. Nausea and vomiting affect from 50 to 90% of women during the first trimester of pregnancy (Arsenault et al., 2002). The degree of nausea and vomiting can be

anywhere from a feeling of queasiness to actual vomiting upon arising and starting the day, leading to it being called "morning sickness." Although morning is a common time for pregnancy-related nausea and vomiting, they can occur at any time of the day or night. In the early stages, pregnancy may not interfere with work and home life, but the degree of nausea and vomiting can certainly affect the physical ability to work and the emotional ability to cope with a new pregnancy. Nausea and vomiting can interfere with other caretaker responsibilities, which were not anticipated at this stage of the pregnancy, and require assistance physiologically and financially. Overall nausea and vomiting can significantly affect quality of life (Attard et al., 2002; Lacasse, Rey, Ferreira, Morin, & Bérard, 2008).

There can be a significant financial impact on the health care system as well as on the individuals and their family. These costs appear as increased health care costs due to hospitalizations, which may be necessary to manage symptoms, increased office visits, and reduced income from working mothers who can no longer maintain their work schedule (Arsenault et al., 2002).

Hyperemesis gravidarum (HG) is a condition of excessive and persistent nausea and vomiting (World Health Organization, 2007). HG affects up to 2% of women and can result in hospitalization (Schiff, Reed, & Daling, 2004). The condition may cause severe dehydration and electrolyte imbalance. The cause of HG has been identified as multifactorial as there are several risk factors that promote the condition in new mothers. These factors may include younger women, primiparous individuals, persons of color, those women less likely to drink alcohol and those carrying female infants (McCarthy, Lutomski, & Greene, 2014; Schiff, Reed, & Daling, 2004).

The specific cause of pregnancy related nausea and vomiting is unknown, though many factors are suspect. Proffet (1988) proposed that these symptoms may be to protect

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Self-Care of Nausea and Vomiting in the First Trimester

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the fetus from foods that contain teratogenic and abortifacient chemicals through expulsion. Flaxman and Sherman (2000) supported this hypothesis in their review of relevant medical, psychological and anthropological literature. First trimester nausea and vomiting may serve an adaptive and prophylactic function to remove potentially contaminated foods from their potential effect on the developing embryo.

Treatment of Nausea and Vomiting in the First Trimester

Most women self-treat symptoms unless they cause excessive weakness or dehydration. Self-treatments occur during the first trimester of pregnancy when nausea and vomiting are most often expected but should certainly be reported if they extend beyond this three month period. Severe episodes of nausea and vomiting which interfere with activities of daily living should always be reported to a health care provider.

Often self-care activities are used by individuals in the management of nausea and vomiting that occur in the first trimester of pregnancy. Potential activities to reduce nausea and vomiting in the first trimester include the following:

- Increase rest to reduce physiological and psychological stress as this may precipitate nausea and vomiting episodes.
- Drink small amounts of water or other clear liquids often to prevent dehydration. Taking sips every few minutes may facilitate maintenance of hydration. Consuming sports drinks or pediatric electrolyte solutions may be helpful as well.
- Consume several small meals of bland foods which may reduce hunger and help maintain nutritional status. If able to tolerate less spicy foods consume whatever can be tolerated to maintain calories and nutritional content.
- Prepare cold food meals if cooking increases feelings of nausea, which may lead to vomiting.
- Keep bland foods (e.g., carbohydrates such as crackers and dry toast) next to the bed and consume some prior to getting out of bed in the morning which may assist with reducing nausea and subsequent vomiting.
- Do not rush getting out of bed in the morning. Awaken early and consume a small amount of a bland carbohydrate to give the body a chance to adjust to the altered daily positioning and activities. Allow 20 to 30 minutes after consumption before getting out of bed.

- Note when nausea and vomiting are better and worse during the day to capitalize on periods of reduced probability for nausea and vomiting to eat and drink.

Although home management is often used, education is important regarding when a healthcare provider should be consulted for nausea and vomiting. The healthcare provider should be consulted for the following situations:

- Nausea and vomiting that does not allow consumption of foods or liquids for 24 hours or more;
- Signs of dehydration such as dizziness upon standing from a sitting position or dark colored urine; or
- An inability to take prescribed daily medications.

A flowchart, provided in Figure 1 (next page), may help women facilitate self-management of nausea and vomiting in the first trimester of pregnancy and identify when to seek additional help.

Acupressure for Nausea in Pregnancy

Acupressure is an effective treatment for nausea in the first trimester of pregnancy (Werntoft & Dykes, 2001). Direkvand-Moghadam and Khosravi (2013) found this technique to be as effective as medicinal treatment with Metoclopramide. Acupressure may be used when the first feeling of abdominal sickness or queasiness occurs. The acupressure point is specifically identified as P6 or the Neiguan point (see Figure 2).

Steps for this technique are as follows:

1. Position the hand up with the palm facing upward towards the face.
2. Place the first three fingers of the opposite hand (or the patients if the care provider is performing this maneuver) at the natural bend of the inner aspect of the opposite wrist.
3. Place the thumb at the place right below the first finger point where one should feel the two tendons on either side of the thumb pad.
4. Use firm pressure and press on this point with a circular motion for two to three minutes.
5. Repeat this process on the other wrist.

Summary

Nausea and vomiting in the first trimester of pregnancy are very common occurrences. These conditions can significantly affect the financial, physiological, and psychological outcomes for the mother. Both conditions should be viewed as a potential hazard to the health and well-being of the mother and fetus. Self-treatment should be based on the severity and length of both nausea and vomiting,

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Figure 1. Algorithm for non-pharmacological management of nausea and vomiting in the first trimester of pregnancy.

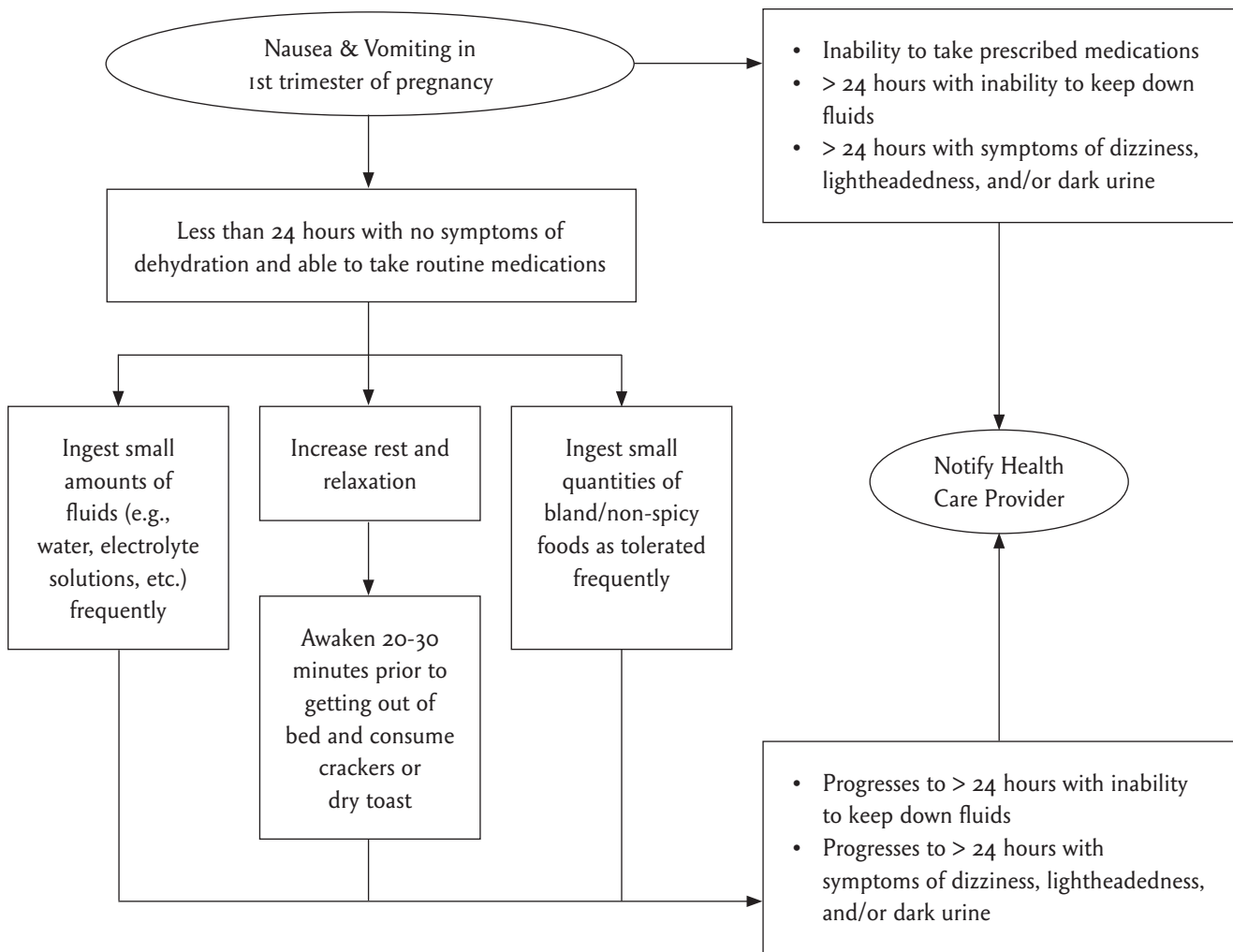


Figure 2. P6 or Neiguan acupressure point for nausea.



Debra Rose Wilson

Self-Care of Nausea and Vomiting in the First Trimester

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and childbirth educators can empower mothers in the first trimester by providing information on self-care and when to seek healthcare provider intervention. Women should be encouraged to seek healthcare provider intervention should nausea and vomiting interfere with daily living activities to such a degree that they are debilitating.

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Aling Aradini

Not So Sexy Legs: The Varicosities of Pregnancy

by Deborah Weatherspoon, PhD MSN RN CRNA, Jeanne Morrison, PhD MSN RN, and Christopher A. Weatherspoon, APRN MS FNP-BC

Abstract: Varicose veins are often a problem for older persons, not women in their childbearing years. In addition to emotional discomfort, varicose veins may cause physical discomfort and could lead to ulcerations. This article reviews the pathophysiology of varicose veins, the increased risk during pregnancy, and current treatment modalities for varicose veins during pregnancy.

Keywords: pregnancy and varicose veins, varicose vein treatment, varicose vein prevention

Sometimes it is difficult for women to feel beautiful and sexy during pregnancy and the appearance of varicose veins may be alarming, or even cause emotional distress as well as physical discomfort. Varicose veins are often associated with older persons, not women in their childbearing years, and this alone may be concerning to pregnant women. In addition to emotional discomfort, varicose veins may cause physical discomfort and may lead to complications. Marsden, Perry, Kelley, Davies, and Guideline Development Group (2013) report that about 10 percent of people with varicose veins will have skin changes ranging from pigmentation change, eczema, or to a lesser extent, venous ulcers.

The occurrence rate in the general population is significant with as many as one third of the population developing varicose veins (Marsden et al., 2013). Pregnancy increases the incidence of varicose veins due to both hormonal and physiologic changes. This article reviews the pathophysiology of varicose veins, the increased risk during pregnancy, and current treatment modalities for varicose veins during pregnancy.

Pathophysiology of Varicose Veins

Varicose veins are dilated superficial veins in the lower extremities. In most cases, the etiology is unknown but believed to be due to venous valvular insufficiency and venous hypertension. While no specific risk factors are known for the general population, varicose veins appear to have a familial tendency and “run in the family.” Women are more susceptible to varicose veins because estrogen affects venous structure (Douketis, 2016).

Pregnancy adds an additional risk factor for varicose veins via several factors. During pregnancy, several organ system adaptations occur. Some relate to hormonal changes while others relate to changes in maternal fat and total body water, decreased plasma proteins concentrations, and increased maternal blood volume.

Blood Volume during Pregnancy

While incompetent valves in the veins are an attributed cause in older adults, increased volume creating higher leg venous pressures are the most probable etiology during pregnancy. Blood volume shows little or no change during the first trimester; however, it increases by 40 to 50 percent above prenatal volume during the second trimester. The peak blood volume usually occurs between 32-36 weeks, then levels with no further increase noted during the third trimester (Abduljalil, Furness, Johnson, Rostami-Hodjegan, & Soltani, 2012; Costantine, 2014).

Lower extremity venous pressures increase due to mechanical constriction of the inferior vena cava. Pressure from the growing fetus and gravid uterus ranges from mild to moderate reduction in venous return and concomitant increase in lower extremity venous pressures. This combination of increased volume and reduced venous blood return from the lower extremities create venous hypertension and negatively affects the capability of venous valves to work properly.

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Not So Sexy Legs: Pregnancy and Varicose Veins

continued from previous page

Hormones

In addition to higher venous pressures, hormones also contribute to the condition. Progesterone, a hormone produced by the corpus luteum in the ovaries, belongs to a group of steroid hormones called progestogens (Society for Endocrinology, 2015). This hormone is necessary for implantation of the fertilized egg and maintaining a pregnancy until term. Increased levels of progesterone contribute to varicose veins by dilating them. This occurs as progesterone inhibits smooth muscle contraction and creates a relaxing effect on muscle leading to vein shrinkage and an increase in venous capacity and valvular insufficiency. The valvular insufficiency is not a damaged or incompetent valve, but simply the result of the valvular edges being spread by vasodilation to the point that they do not touch (Ropacka-Lesiak, Kaspercak, & Breborowicz, 2012).



Aling Aradini

Estrogens have many affects during pregnancy. In relation to varicose veins, estrogens cause a relaxation and loosening of the bonds between collagen fibers and synthesis. This can result in the formation of telangiectasia even if venous hypertension is not present. Telangiectasia, more commonly known as spider veins, are small dilated blood vessels near the surface of the skin. Estrogens also have an effect on the synthesis of prostaglandins and nitric oxide. Estradiol, a form of estrogen, increases the production, activity, and bioavailability of nitric oxide, a molecule with a strong vasodilating effect.

Other actions of estrogens during pregnancy that may influence or complicate varicose veins include an increase in the synthesis of coagulation proteins that may result in a high risk for developing venous thrombosis (Ropacka-Lesiak et al., 2012).

Weight Gain and Reduced Physical Activity

Another consideration is weight gain and reduced physical activity during pregnancy. Weight gain adds to increased intra-abdominal pressure on the inferior vena cava leading to decreased venous return. Prolonged standing or sitting can affect the development of venous insufficiency during pregnancy as well. As muscles contract in the lower extremities, this helps push the venous blood in its upward flow.

Signs and Symptoms

Varicosities of the Lower Extremities

Signs of varicose veins may first be noted on palpation. The veins may feel tense or full to the touch before they actually become visible. As they progress and enlarge, they may protrude and appear to have knots. They will be most visible when the person is standing. Symptoms include a feeling of fullness, pressure, and fatigue in the legs. Superficial pain and hyperesthesia may also be reported (Douketis, 2016).

Skin change may be noted with areas that are pigmented or have eczema type rashes. Eczema rashes are caused by inflammation, secondary to the venous engorgement and may be dry and itchy. Although a varicose vein can thrombose (clot) it is not common in pregnancy. The skin over a varicose vein may be more fragile than normal and bleed easily even with minor trauma.

Hemorrhoids and Vulvar Varicosities

Other forms of varicose veins occur as hemorrhoids and vulvar varicosities. Vulvar varicose veins, or varicosities, occur in about ten percent of pregnant women (Jindal, Dedhia, Tambe, & Jerajani, 2014, p. 1). These varicosities tend to occur during the second and third trimesters and usually

continued on next page

Not So Sexy Legs: Pregnancy and Varicose Veins

continued from previous page

resolve postpartum. They may be small or quite large and appear as tortuous, soft, compressible swellings over the external surface of the labia majora (Taingson et al., 2016). Large vulvar varicosities may be extremely uncomfortable due to the bulk, warmth, and tension on the labia majora (Taingson et al., 2016). The condition may be embarrassing, or create anxiety, as the discomfort is significant during walking or sitting (Taingson et al., 2016).

Hemorrhoids are swollen and inflamed veins in the anus and lower rectum. They may be internal or external and pregnancy and constipation are risk factors. Decreased GI motility often accompanies the increased intra-abdominal pressures associated with pregnancy, making this a common problem. In addition, the same influences of hormones act on these vessels as well. Both hemorrhoids and vulvar varicosities can be swollen and sore making sitting uncomfortable.

Evidence Based Practice

There are several interventional vascular treatments for varicose veins of the lower extremities including sclerotherapy, surgery, and laser ablation. The treatments are generally not recommended during pregnancy (Marsden et al., 2013). Considering the causes of the varicose veins are self-limiting and resolve without medical intervention, the risks associated with treatment outweigh the benefits. There are incidences where complications of bleeding or thrombus are an exception and must be determined on an individual basis.

Varicosities of the vulva are also approached with conservative therapy and reassurances that they usually disappear postpartum. Sclerotherapy is rarely used, mostly in cases of extensive vulvar varices that may rupture during labor (Taingson et al., 2016). Special compression garments such as V2 supporter or the V-Brace provides support for the varicosities and relieve the pain associated with the condition. V supporters are available commercially.

The most important thing the childbirth educator can do is reassure the patient and provide information on the effect of pregnancy on varicose veins. Explain that the varicose veins will most likely regress without treatment after the pregnancy, and referral and treatment is only needed if complications of ulcers or thrombosis occur. Prevention is the first line of defense and includes guidance on exercise, maintaining a healthy diet and appropriate weight gain. It also should include guidance on body positioning, compression stockings or hose, and the use of a V-support if indicated.

Suggested Topics for Education:

- Exercise
- Maintain a healthy weight
- Avoid constipation
- Consider wearing support hose
- Consider a V-support
- Elevate your legs
- Sleep on your left side
- Warm compresses may relieve inflammation
- Talk to your doctor immediately if veins are red, swollen, very warm, or painful

Encourage exercise to promote circulation in the lower legs. Recommendations by the American College of Obstetricians and Gynecologists (ACOG, 2015) include regular physical activity during pregnancy. Recommend a thorough clinical evaluation before beginning an exercise program; however, stress the importance and safety of exercise during pregnancy. All women with uncomplicated pregnancies should engage in aerobic and strength conditioning exercise (ACOG, 2015). Approximately thirty minutes per day of moderate exercise is a good recommendation.

Examples of safe moderate physical activities during pregnancy include:

- Walking
- Swimming
- Stationary cycling
- Low-impact aerobics
- Yoga (avoid positions that may cause decreased venous return)
- Pilates

Maintain a healthy diet and avoid gaining too much weight. For most uncomplicated pregnancies, approximately 25 pounds is considered a healthy weight gain during pregnancy. A healthy diet should include plenty of fruits and vegetables. Using a tool such as the www.choosemyplate.gov may help explain the portions of fruits, grains, vegetables, and proteins that support good nutrition. The United States Department of Agriculture (USDA, 2016) website offers a pregnancy weight gain calculator that allows entry of weight and height and provides a guideline on how much weight gain is optimal. Education should include that healthy weight gain is approximately 1 to 4 pounds gained during the first trimester and 2 to 4 pounds per month for the second and third trimester (USDA, 2016, p. 1). Maintain hydration by drinking eight to ten glasses of water per day.

Another strategy to promote circulation is to periodically rest with the legs elevated above the level of the heart.

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Not So Sexy Legs: Pregnancy and Varicose Veins

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If standing for a prolonged time, alternate body weight from one leg to another and when sitting, avoid crossing the legs. Consider recommending compression stockings or support hose. Provide information for a correct fit that provides support without compromising circulation.

Another important reminder is for a sleeping position. The preferred position may be referred to as SOS or Sleep on Side (American Pregnancy Association, 2015). The left side is recommended, as this is optimal for preventing the gravid uterus from impeding blood flow through the inferior vena, and increases blood flow and nutrients to the placenta and fetus.

Finally, consider the interval between pregnancies. Varicose veins may disappear after pregnancy however, after each subsequent pregnancy varicose veins are more likely to appear and become more visible. For women who had varicose veins in previous pregnancies, prevention strategies are especially important during subsequent pregnancy. Allowing time between pregnancies allows for physiological regeneration of the vascular system. In cases of women who were pregnant more than once, the risk of developing varicose veins and other venous insufficiency is doubled (Ropacka-Lesiak et al., 2012).

Conclusion

Varicose veins are a frequent occurrence during pregnancy and may cause both emotional and physical distress. Education should begin early in pregnancy that defines prevention strategies needed to minimize their occurrence and complication rates. Childbirth educators should take a proactive approach discussing the possibility of varicose veins and ways to prevent them. This article provides a review of the pathophysiology of varicose veins and the latest recommendations for treatment and most importantly, prevention.

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The Forgotten System During Pregnancy: *Women and Oral Health*

by Janice Harris, EdS MSN RN COI

Abstract: An often-forgotten aspect of the welfare of the mother and the baby is dental health. The oral cavity has pregnancy induced-changes as well as every other body system. Periodontal disease has been associated with poor outcomes such as pre-term birth, preeclampsia, and low birth weight. The primary objective of this paper is to educate caregivers and patients in how to prevent periodontal disease.

Keywords: pregnancy, oral health, gum health, oral hygiene

Pregnancy is a wonderful, life changing event in a woman's life. There are so many changes occurring and everyone is interested in the development from embryo to fetus to child. There are the prenatal visits to the obstetrician and nutritional information, but an often-forgotten aspect of the welfare of the mother and the baby is dental health. There are studies showing a potential link between the oral health of the mother and the outcome of the pregnancy (CDC, 2016; Crest 2016; Gaffield,2016,).

There is a potential link between the oral health of the mother and the outcome of the pregnancy

Data collected by the Pregnancy Risk Monitoring Assessment Monitoring System (PRAMS) showed approximately 25% of the women who responded to the data request experienced dental issues during the pregnancy. Of those reporting less than 50% received dental care. From this came

the conclusion; most women, while pregnant, do not seek dental care usually because they do not have dental insurance and do not have a way to pay for dental care thus delaying treatment of periodontal disease (Gaffield, et al., 2001).

The Center for Disease Control (CDC) (2016) defines periodontal disease per the stage of the disease. Gingivitis is an early stage of the disease and is an "inflammation of the gums" (Para 1) with possible swelling and bleeding. Once the disease has amplified it is known as periodontitis and now involves inflammation of the gums with potential pulling away of the gums from the teeth, but also includes tooth loss and further aids in the reduction of the underlying bone structure of the mouth (Crest, 2016; Gilliam, 2016).

The oral cavity has pregnancy induced-changes as well as every other body system. These changes increase the risk of periodontal disease. The American Academy of Pediatric Dentistry Review Council contribute many of these developments to the hormonal changes but also to decreased plaque control, mouth breathing, increased sugary snacking and morning sickness emesis. All contributing factors do not have to be present to increase the mother's risk of various levels of periodontal disease. Some studies have shown that periodontal disease has a definitive link between gestational diabetes and increases the risk of the mother developing type II Diabetes later in life (American Academy of Pediatric Dentistry, 2016).

The mother to be may present with bleeding gums but on rare occasions she may complain of a bump on the gums. This is known as "pyogenic granuloma (pregnancy tumor or granuloma gravidarum). This type of lesion usually disappears after the pregnancy but occasionally it must be surgically removed (American Academy of Pediatric Dentistry, 2016; Crest, 2016; March of Dimes, 2016).

Periodontal disease has been associated with poor outcomes in pregnancy such as pre-term infants, preeclampsia, low birth weight babies and increases the risk of mother

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The Forgotten System During Pregnancy: Women and Oral Health *continued from previous page*

and/or baby morbidity. There are numerous research studies attempting to prove or negate these findings. However, no study to date has confirmed the outcomes to a significant degree. The suggestion of these poor outcomes is still enough to inspire caregivers to work with pregnant patients to improve their oral health. In the resources box are websites for the caregiver and the patients to explore dental health facts during pregnancy.

The following are warning signals for the caregiver to consider the possibility of periodontal disease in the pregnant patient:

- Bad breath or bad taste that won't go away
- Red or swollen gums
- Tender or bleeding gums
- Painful chewing
- Loose teeth
- Sensitive teeth
- Gums that have pulled away from your teeth
- Any change in the way your teeth fit together when you bite
- Any change in the fit of partial dentures

The following risk factors may indicate the need for further information and a referral to a dentist:

- Smoking
- Diabetes
- Poor oral hygiene
- Stress
- Heredity
- Crooked teeth
- Underlying immuno-deficiencies—e.g., AIDS
- Fillings that have become defective
- Taking medications that cause dry mouth
- Bridges that no longer fit properly
- Female hormonal changes, such as with pregnancy or the use of oral contraceptives

(CDC, 2016, Crest, 2016, March of Dimes, 2016)

As the healthcare provider of a pregnant or soon to be pregnant patient, there are responsibilities to help prevent any potential untoward outcomes during the pregnancy. She should be encouraged to visit the dentist both before and throughout the pregnancy. There should also be an emphasis on at least daily brushing of the teeth and encouragement to

Resources:

<http://www.marchofdimes.org/pregnancy/dental-health-during-pregnancy.aspx>
<http://www.webmd.com/oral-health/dental-care-pregnancy#1>
http://www.cdc.gov/OralHealth/periodontal_disease/index.htm
<https://crest.com/en-us/oral-care-topics/gingivitis/swollen-gums-during-pregnancy>

brush after every meal and snack. Sometimes morning sickness prevents the pregnant patient from brushing, so encourage her to at least rinse her mouth with water or an antiseptic mouthwash. If she is having frequent emesis, then it is important to rinse the mouth well after each episode. During pregnancy flossing is important, as hormonal changes increase the buildup of plaque between the teeth (CDC, 2016; Crest, 2016; March of Dimes, 2016; Review Council, 2016).

Pregnancy is an important part of many women's lives. The forgotten system does not have to be a major detriment to the enjoyment of having a baby. The primary objective of this paper is to educate caregivers and patients in how to prevent periodontal disease.

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PICA during Pregnancy

by Derrick Johnson, MSN RN, and Kathy Gretton, RN FNP-c MSN MHSA

Abstract: *This article summarizes present information about pica practices carried out for the duration of pregnancy. This research was done by systematically reviewing literature between the periods of 2008 through 2016. Pica behavior was measured in terms of its definition and general information, the interviewing process, the prevalence during pregnancy, symptoms, complications, and medical management. This article concludes that people who have nutrient deficiencies, live in lower income areas, and have a family history of cultural exposure are more prone to the consumption of non-food materials. Health care providers who manage expecting mothers should have a non-judgmental approach during the interviewing process so the patient is quickly diagnosed and treated.*

Keywords: pica, pica pregnancy, prenatal pica

What is PICA?

Pica refers to the compulsive craving and consumption of nonfood items. An individual's craving, mouthing, or consumption of materials that are fundamentally nonnutritive is described as pica. Most often the substances are harmless, but also may include toxic substances such as paint, pencil lead, sharp objects, sand, soap, buttons, clay, dirt, sand, cigarette buds, glue, glass, feces, ice, hair, paper, drywall, metal, stones, starch, and chalk (Upadhyaya & Sharma, 2012). This condition has been observed for greater than 2,000 years with the first known description provided by Hippocrates in

400 BCE. Pica is most prevalent among pregnant women and children (Lumish et al., 2014). This illness may be benign or it may have deadly consequences.

Although the causes of pica are unknown, pica during pregnancy has been linked to both physiological and psychological impairments. Physiological impairments including deficits in zinc, iron, calcium, thiamine, and vitamin C have been associated with pica (Upadhyaya et al., 2012). These deficiencies increase during pregnancy to compensate the needs of the unborn child. Often the element consumed by an individual contains the material to which the particular person has a deficiency. In addition to nutritional insufficiencies, psychological aspects such as cultural factors or learned behavior, trauma or stress, low economic position, malnutrition or hunger, and underlying biochemical disorders may play a part.

The intake of these types of materials must be consumed persistently for one month or more to be considered a true diagnosis of pica (Jyothi, 2015). The person ingesting or mouthing such items must be of an appropriate age where consumption of such substances is thought of as developmentally incorrect. During toddler ages, tasting and digestion of nonfood materials is not considered pathologic. This disease would not be an appropriate diagnosis for an infant or toddler mouthing on toys or swallowing paint chips found on the floor because of curiosity. A minimum age of 2 years is suggested for the diagnosis (Aparna, Austin, & Mathew, 2012). Those that are not yet intellectually competent do not have the ability to differentiate food items from nonfood items.

General Information

Signs and symptoms of pica vary depending on the substance being consumed. Physical signs and symptoms consist of stomach pain, nausea and vomiting, and bloating triggered by a blockage in the stomach or gastrointestinal track, and fatigue. Intestinal obstructions or tearing of the stomach is one of the most dangerous and common physiological

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PICA During Pregnancy

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impairments that a person can encounter during prolonged pica. This is likely in those who consume indigestible items such as glass. This can lead to surgical emergencies to return the gastrointestinal track back to its patent state. Psychological stressors such as emotional disturbances, deprivation, domestic concerns, parental negligence, and a disordered family situation can result in pica as a form of comfort. Also, schizophrenia and obsessive-compulsive disorders are additional psychological abnormalities that must be considered (Upadhyaya et al., 2012).

Ashamed to Admit

Pica is generally difficult to diagnose. To accurately diagnose pregnant woman with this illness, there must be a trusting and reliable caregiver-patient relationship. The patient must be honest with their health care providers about the nonnutritive items they have consumed. This will help with a correct diagnosis and a quick start to treatment. Whether it is a physiological or psychological reason for the illness, healthcare workers must understand that this subject can be particularly humiliating (Kumsar, 2013). The client

may be ashamed to admit pertinent information during the interview because of the understanding that the consumption of nonfood materials is not a normal action or may not be culturally accepted. This is especially true during pregnancy. Expecting mothers have the extra responsibility of taking care of themselves and their unborn child. The reality is that non-food items may encompass poisonous elements that can potentially injure both mother and baby. To admit to potentially harming the fetus would be a challenging task. During the stage in which life inside the womb is affected, medical steps must be taken to ensure the safety of the fetus's existence.

In addition, Professionals must be aware of the cultural scenarios that can take place. For example, in Australia, Turkey, and Africa, clay has been used to enhance fertility. Culturally, this is categorized as normal practice as part of their principles, healing techniques, or spiritual ceremonies (Blinder, 2008). In the United States, starch consumption is frequently started during the beginning of pregnancy as management for morning sickness and in some cases continues into the post-delivery period. Most common with individuals that partake in the consumption of nonfood items is their lack of access to wealth. Those who live in lower income communities are more likely to take part in this illness. This behavior is often hidden from professionals because of the patient's perception that they will be judged for their cultural differences. Taking an open-minded stance gives the patient an opportunity to open up and not be ashamed of their actions (Kumsar & Erol, 2013). The patient should understand that the information shared will be kept confidential and also that the patient will not be judged.

Stigma with Pica

Prenatal care providers are often challenged when it comes to identifying expectant mothers practicing pica. The stigma associated with indulging in compulsive behaviors that have potential to put the unborn child at risk is a significant conversation deterrent. Mothers will not readily admit their behaviors for fear of being judged or ridiculed. This is even further exacerbated in populations of minority or low socio-economic status, as these women are already burdened with stigmas from other health determinants. As with any medical condition in which a stigma is associated, it is essential to change the perception and mindset of society as a whole to foster understanding. This occurs through open dialogue, education, and extension of sensitivity and empathy to those afflicted with the condition. As prenatal providers incorporate routine practices of screening and conversations about pica, the healthcare community will likely undergo a shift in thinking. If conversations about

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PICA During Pregnancy

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pica were as common as discussions about morning sickness, expectant mothers would suddenly be relieved of the burden of hiding a behavior for which they have little control. Expectant mothers with pica would be liberated to share their compulsions to ingest nonfood substances and likely be more receptive to available treatment options.

Treating Pica

Before an open dialogue occurs, prenatal providers should be informed about the associated complications with the ingestion of the various nonfood substances that women with pica often consume. "Although most healthcare providers consider the practice of pica during pregnancy to be harmful and should be discouraged, not all pica appears to be harmful and requires intervention" (Corbett & Kolasa, 2014). Providers should be prepared to educate mothers about the true risk associated with the consumed substance and not further the stigmatization by generalizing the practice of pica. For example, the concern for ingestion of clay is attributed to high lead content found in some clay and the understanding that lead easily crosses the placenta and is excreted into breast milk (Corbett et al., 2014). A mother that consumes clay is more at risk for adverse effects than a mother that is consuming ice chips. Pica items are diverse, and vary according to race/ethnicity, culture, and geographic location (Barton & Bertoli, 2010). Providers are charged with the delicate task of assessing for the behavior and identifying the risk level.

Treatment for pica would be dependent upon the cause identified. "Although the etiology of the elevated incidence of pica during pregnancy is not currently understood, one of the most common hypotheses is that pica is driven by an underlying nutrient deficiency" (Lumish et al., 2014). There are numerous epidemiologic studies in which an association was observed between pregnancy, iron deficiency anemia, and pica (Lumish et al., 2014). Despite the well documented correlation between pica and anemia, the origins of the condition remain unknown. Does anemia result in pica or does pica result in anemia? Knowing the answer to this question may contribute to more effective treatment.

According to Corbett (2014), Treatment needs to take into account the type and amount of nonfood substance consumed, any nutritional deficiency, and other medical problems. Education and interventions to reduce pica are the cornerstones of the treatment regimen which includes disclosure about known risks and concerns of unknown risks. Because of the psychological component associated with this

condition, it is important to address any underlying mental health concerns that may be contributing factors. Treatment would be varied depending upon the patient and may include: iron or other nutrient supplements, education, nutritional/ dietary consults, psychological consults/ treatments. Ultimately the goal is to gradually change eating behaviors and support the patient during this change (Corbett et al., 2014). For health care providers of pregnant clients, it is important to identify the practice of pica, promote understanding and lead the charge to diminish the stigma of this very old and multidimensional disorder.

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The Mother-Infant Interaction Picture Book: Origins of Attachment

by Beebe, B., Cohen, P. & Lachmann F.

W. W. Norton & Company, Inc. New York, New York, 2016, 249 pages, \$35.00

reviewed by Sandra Marklin, PhD, CNS, RN

In *The Mother-Infant-Interaction Picture: Origins of Attachment*, Beebe and colleagues offer an opposing perspective to the established view that parental response to the infant is responsible for the total infant experience. They hold a view that emphasizes the development of the mother-infant relationship as a partnership molded by individual interaction with each other. While the parent may exhibit an increased capacity, range, and flexibility there is a contribution from the infant that solidifies the dynamic.

Relationships cannot be sustainable without interaction and communication. These elements develop a sense of transparency and security for the parties involved, in this case, the mother-infant. Nothing illustrates this more profoundly than the mother-infant attachments developed at four months. The authors studied infants at this age due to the fact that the attachments formulated at this age are good predictors of the attachments present at one year of age.

Two research methods were utilized in this study to collect vital data necessary to verify the validity of the results. Mother-infant face-to-face interaction at four months was an essential component of the study. This time of interaction reflects an integral of the parental infant relationship so vital to this research. The sole purpose of this four-month interaction is play and demonstrates a degree of pleasure and enjoyment between the two.

The second research method examined secure and insecure infant attachment patterns at one year of age. Early attachments play a key role in manifesting higher self-esteem, an ability to form close relationships, and the ability to handle stress. The tool used in examining attachments was the strange situation paradigm, which measures mother-infant reactions to one another following separation. This method is highly respected and evaluates the reactions by the mother and infant following a separation.

Eighty-four mother-infant pairs participated in this study to assess mother-infant interaction and attachment patterns. A process called microanalysis was used to videotape parent-infant communication, which allowed the authors to observe all interactions between the mother and infant. Microanalysis is often compared to a social microscope and this process allowed Beebe and colleagues to see details not visible with the naked eye. Each phase studied demonstrated the affect mothers and infants had on each other. An additional insight offered by microanalysis revealed that at four months, infants were extremely communicative and cognizant of the emotional status of their parents. In an effort to maintain confidentiality of the families involved in the research, an artist was hired to reproduce the interactions based on the actual

video. In order to maintain the validity of the research, half of the drawings reflected secure attachments while the other half were of the insecure attachment type.

In order to fully understand the role that attachments play in the developmental stage of an infant it is necessary to categorize them. In the matter of insecure patterns they are defined as disorganized, resistant, and avoidant. These classifications are based on how an infant reacts to a parent following a separation. Do they recognize the parent as a source of security and comfort or one of apprehension? Do they gravitate toward the parent or display a degree of reticence?

Secure infants display the ability to be comforted easily following a period of separation from the parent and feel they incorporate security in their environment. Avoidant infants tend to isolate themselves from the parent upon their reunion and are content to play on their own. A child described as resistant displays stress and anxiety when the parent leaves, remains agitated when a parent returns, and refuses to play. One recognized as disorganized will approach and retreat from the parent. They display a degree of apprehension and confusion when confronted by the parent. Data reveals that 55 to 65 percent of infants are recognized as having secure attachments, 15 percent comprise the avoidant group, and 10 percent are resistant.

Mothers play an essential role in forming attachments with their infants. The mothers who have secure infants are proactive in dealing with infant needs, display a propensity to hold the child, and keep their emotions in check. Parents with insecure infants tend to be less receptive to the needs of the infant, display their emotions more frequently, and are less likely to show the infant affection.

This work by Beebe should be heartily endorsed by any healthcare provider involved in early childhood care. It offers concise direction on recognizing the importance of early parent infant communication and attachment. Healthcare providers must not discount early infant communication and attachment in the role of personality development. The book can also be a tool used by young parents as they not only deal with physical development but also emotional. The attachments described bring to light the relevance and importance of active communication and interaction.

Dr. Sandra Marklin is a Professor of Nursing at Western Governor's University. She serves on the board of directors for the Tennessee Nursing Foundation, and is a member of Tennessee Nursing Association, Sigma Theta Tau, and the Honor Key Society of Nursing.

Social and Behavioral Science for Health Professionals

by Hinote, B.P., and Wasserman, J.A.

Rowman and Littlefield, New York, 2017,
360 pages, \$140.00 hardcover

reviewed by James G. Linn, PhD and Thabo T. Fako, PhD

There are only a few books that have provided path-breaking conceptual frameworks for nursing, including maternal and child nursing and the related field of childbirth education. One of these is Dr. Patricia Benner's *From Novice to Expert: Excellence and Power in Clinical Nursing Practice* and now we have another, Drs. Brian Hinote and Jason Wasserman's *Social and Behavioral Science for Health Professionals*. Dr Benner brought nursing an enduring typology of the five levels of competency in clinical nursing practice. They included Novice, Advanced Beginner, Competent, Proficient, and Expert. Each of these stages included measurable degrees of clinical judgment, caring practices, and collaborative practice. Drs. Hinote and Wasserman bring to nursing the Sociological Imagination, which greatly expands nurses' understanding of the social epidemiology and determinants of health and their grasp of concepts such as power, medicalization, illness, and communication that are now recognized globally as being essential for effective clinical practice.

Social and Behavioral Science for Health Professionals is organized into three distinct but related sections. The first section (Chapters 1-3) includes concepts and insights for analyzing health and illness. A second part (Chapters 4-6) focuses on epidemiological issues and the way that population health is structured by the social forces indicated by age, income, education, race, gender, and culture. The third section of the book (Chapters 7-11) is principally concerned with micro-level phenomena, e.g., medicalization, power in the clinic, illness and patient identity, clinical communication, professional teamwork, and bioethics. While a final chapter discusses key healthcare system benchmarks/goals for analyzing healthcare programs in industrialized and developing societies, e.g., costs, access, and quality of care, it also provides a variety of healthcare system models – mutual aid, state run, corporatist – and an insightful discussion of healthcare in the United States.

One of the special features of *Social and Behavioral Science for Health Professionals* that make it an outstanding

textbook is the use of “Threshold Concepts” to organize each chapter. According to the authors, a threshold concept is transformative. It changes a person's world view so that they are more adaptive and see the world of health and healthcare from a variety of viewpoints, e.g., as nurses, medical doctors, dentists and other allied health workers, and as patients. A random selection of threshold concepts used by Hinote and Wasserman includes Sociological Imagination, Reflexivity, Social Determinants of Health, Disparity, Taking on Another's Role, Professionalization, Medicalization, and System. Other features that make this a superior text are the Learning Objectives and Activities at the beginning and end of each chapter. Each of these is well integrated with the concepts and information included in each chapter and, therefore, promotes actual learning rather than, as too often is the case, boredom.

A thoughtful reading of this book will expand the view of health and healthcare and the relevant social and behavioral science knowledge base of childbirth educators and other nurses, medical doctors, dentists, and allied health professionals. This is a very sophisticated textbook that covers a wide range of social science and behavioral concepts and information related to health and healthcare systems. Therefore, it is recommended for childbirth educators and other nurses, medical doctors, dentists, and allied health professionals who are pursuing a Masters or higher degree. Once read, it will be a book they will keep in their permanent reference library.

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